ADSL2+ USB/Ethernet Combo Bridge Router
Freeway DSL User's Manual

Revision 0.2
March 2008

Table of Contents

1. INTRODUCTION 1

1.1 FEATURES 1
1.2 SYSTEM REQUIREMENT 1

2. FREEWAY DSL OVERVIEW 2

2.1 LED DESCRIPTION 2
2.2 PORTS AND BUTTONS 3
2.3 INSTALLING YOUR FREEWAY DSL 3

3. SETTING UP YOUR FREEWAY DSL 4

3.1 LOG INTO YOUR FREEWAY DSL 4

4. ADVANCED SETUP 6

4.1 SYSTEM 7
4.1.1 Host Name Config 7
4.1.2 System Time 8
4.1.3 Administrator Settings 9
4.1.4 Firmware Upgrade 10
4.1.5 Configuration Settings 10
4.1.6 System Log 12
4.1.7 Reset 13
4.2 STATISTICS 13
4.2.1 LAN Statistics 13
4.2.2 WAN Statistics 14
4.3 ADSL 15
4.3.1 ADSL Line Status 15
4.3.2 ADSL PHY Configuration 16
4.4 WAN 17
4.4.1 ADSL VC Configuration 17
4.4.2 WAN Settings 19
Dynamic IP 21
Static IP 21
PPPoE 23
PPPoA 24
Bridge 24
4.4.3 WAN Status 25
4.4.4 Domain Name Server (DNS) 26
4.4.5 VLAN Configuration 26
4.4.6 ADSL OAM Configuration 27
4.5 LAN 28
4.5.1 LAN Settings 28
4.5.2 DHCP Client List 29
4.5.3 Static Routing 29
4.5.4 Routing Table List 30
4.5.5 IPv6 31
4.6 FIREWALL 31
4.6.1 Firewall Settings 31
4.6.2 Packet Filtering 32
4.6.3 Parental Control 34
4.6.4 Application Filtering 35
4.6.5 Application Server Settings 35
4.6.6 ACL (Access Control List) 37
4.7 NAT 38
4.7.1 NAT (Network Address Translation) Settings 38
4.7.2 Virtual Server 39
4.7.3 DMZ (Demilitarized Zone) 40
4.8 DEVICE MANAGEMENT 41
4.8.1 SNMP (Simple Network Management Protocol) 41

APPENDIX. TROUBLESHOOTING 42

1. Introduction

The FREEWAY DSL ADSL2+ USB Ethernet Combo Bridge Router provides sharing the broadband connection through the Fast Ethernet LAN port and 24Mbps high speed downstream via the USB 2.0 device port.

The FREEWAY DSL is compatible with ADSL, ADSL2, and ADSL2+ lines for connecting to the Internet and combines the NAT and NAPT functions for sharing and a firewall for security. It can be easily configured through a web-browser interface, with a built-in setup wizard to guide user through initial setup.

1.1 Features

- Comply with ITU ADSL, ADSL and ADSL2+ standards
- Comply with IEEE802.3/802.3u 10/100 BASE-T standards
- USB 2.0 device port provides full ADSL2+ download speed
- Enables sharing of broadband Internet connection
- Double firewalls: NAT and SPI
- Built-in DHCP server
- Mac address filtering
- VPN pass-through
- Web-based advanced user interface
- SNMP, DMZ, port mapping, port forwarding (optional)
- TR-068 compliance

1.2 System Requirement

In order to use the FREEWAY DSL, you must have the following:

- ADSL service up and running on your telephone line, with at least one public Internet address for your LAN
- One or more computers each containing an Ethernet network interface card (NIC) and/or a single computer with a USB port
- An Ethernet hub/switch, if you are connecting the device to more than one computer on an Ethernet network
- For system configuration using the supplied web-based program: a web browser such as Internet Explorer v5.0 or later, Firefox v2.0 or later, or Netscape v6.1 or later

2. FREEWAY DSL Overview

Your FREEWAY DSL has many ports, LEDs and button. The features are listed below.

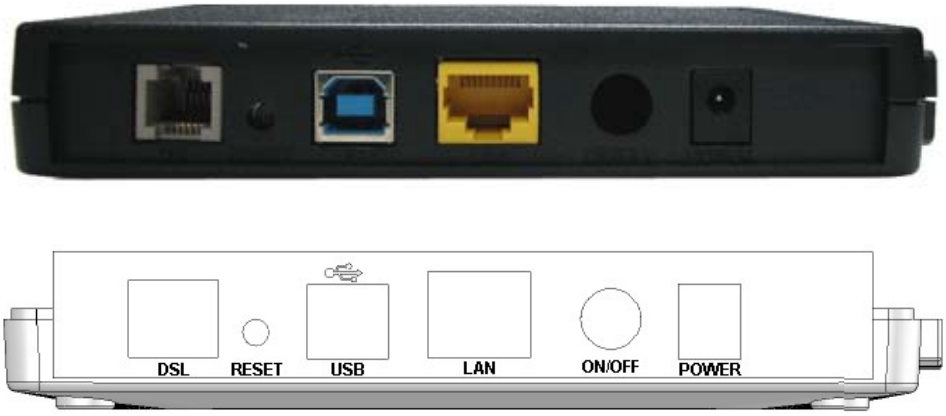
2.1 LED Description

The front panel contains lights called LEDs that indicate the status of the FREEWAY DSL.

LED	Status	Description
POWER	**On**	The device is power on.
	Off	The device is power off.
LAN	**On**	The LAN port is connected to Ethernet device.
	Blinking	The data is sending/receiving via LAN port.
	Off	The LAN port is not connected to Ethernet device.
USB	**On**	The device is successfully connected to a USB equipped device.
	Blinking	The data is sending/receiving via USB port.
	Off	The device is not connected to a USB equipped device.
DSL	**On**	The device is successfully linked with ADSL line (DSLAM).
	Blinking	The device is trying to link with ADSL line (DSLAM).
	Off	The device is not linked with ADSL line (DSLAM).
Internet	**On**	The device is successfully connected to Internet.
	Blinking	The device is sending/receiving data from Internet.
	Off	The WAN port is not connected to Internet.

2.2 Ports and Buttons

The rear panel contains the ports for the FREEWAY DSL's data and power connections.



DSL: Connecter for accessing the Internet through ADSL line.

USB: Connector for USB equipped PC.

LAN: Connector for Ethernet network devices, such as a PC, hub, switch, or router.

ON/OFF: Power switch to power on/off the FREEEWAY DSL.

POWER: Connecter for a power adapter. Using a power supply with a different voltage rating will damage this product. Make sure to observe the proper power requirements. The requirement of adapter is 9V AC/ 1A.

RESET: Restore the default settings. You may need to place the FREEWAY DSL into its factory defaults if the configuration is changed, you loose the ability to enter the FREEWAY DSL via the web interface, or following a software upgrade, and you loose the ability to enter the FREEWAY DSL. To reset the FREEWAY DSL, simply press the reset button for more than 5 seconds. The FREEWAY DSL will be reset to its factory defaults and after about 30 seconds the FREEWAY DSL will become operational again.

2.3 Installing your FREEWAY DSL

1. Locate an optimum location for the FREEWAY DSL.
2. For connections to the Ethernet and DSL interfaces, refer to the Quick Start Guide.
3. Connect the Power Adapter. Depending upon the type of network, you may want to put the power supply on an uninterruptible supply. Only use the power adapter supplied with the FREEWAY DSL. A different adapter may damage the product.

The hardware installation is now complete, continue on to set up your FREEWAY DSL.

3. Setting up Your FREEWAY DSL

This section guides you through configuring your FREEWAY DSL. Before setting up your FREEWAY DSL, make sure you have followed the Quick Start Guide. You should have your computers configured for DHCP mode and have proxies disabled on your browser. If you do not get the page as shown below, you may need to delete your temporary Internet files by flushing the cached web pages.

3.1 Log into Your FREEWAY DSL

Use the following procedures to log in to your FREEWAY DSL.

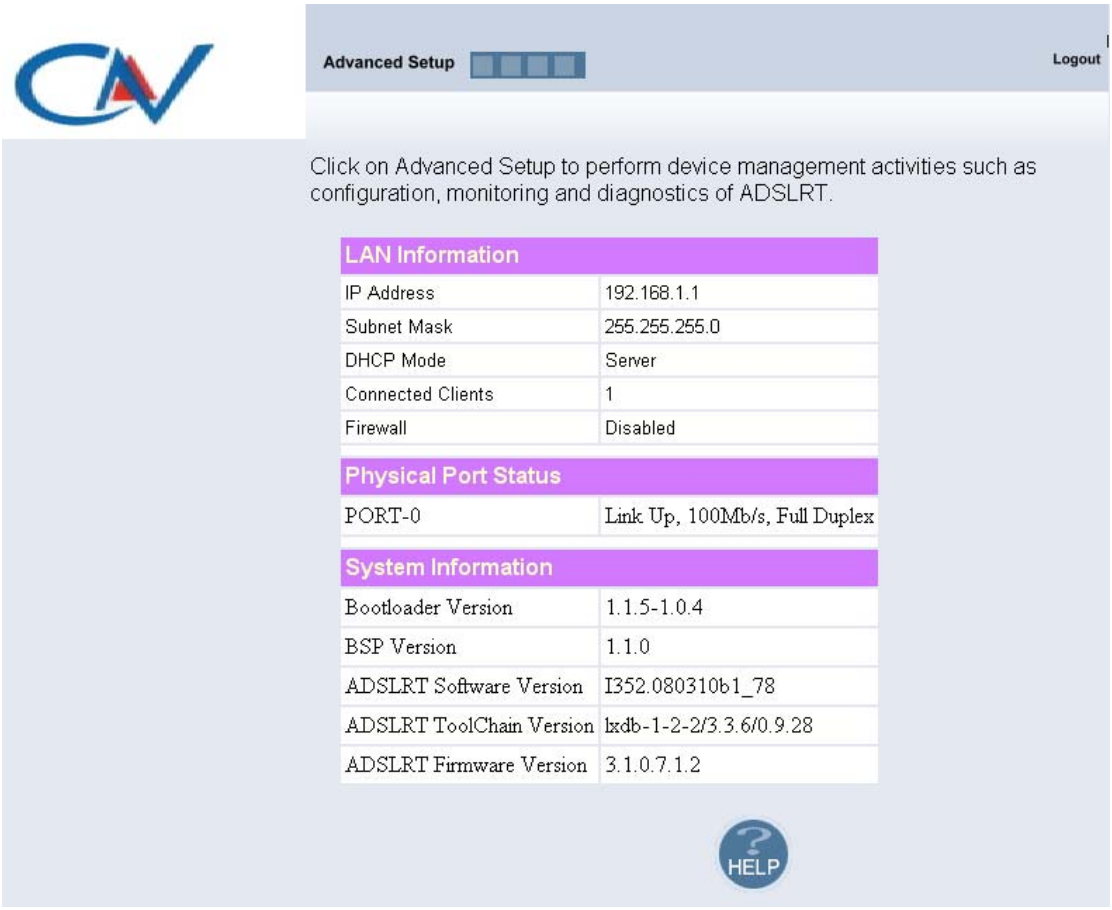
1. Open your web browser. Type the default IP address of the Freeway DSL **http://192.168.1.1** and press Enter.
   The Welcome page appears.

2. Enter user name as **admin** and password as **admin** (case sensitive).
3. Click **OK**.
   The main page appears.

Note

*You can change the password from **System** then **Administrator Settings** page at any time.*

The Web Application is displayed as shown below.



Web configuration can be done by Administrators. Administrators have the right to configure all the options available in the Web interface.

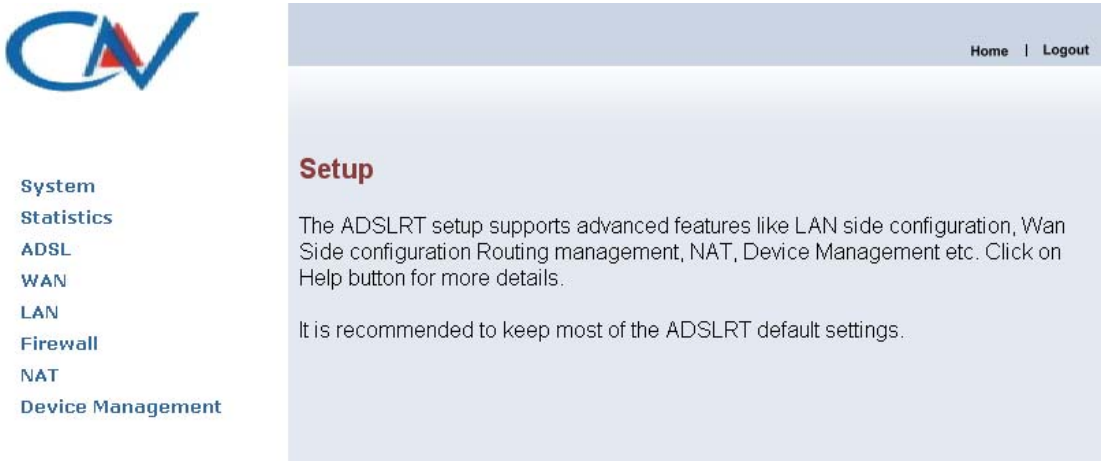
Field	Description
LAN	
IP Address	Shows the local IP address of ADSL CPE.
Subnet Mask	Shows the local subnet mask of ADSL CPE.
DHCP Mode	Shows whether DHCP client is enabled for LAN. • **Disabled** • **Server**: If the DHCP mode is Server, there is an additional piece of information on the number of connected clients. • **Relay Agent**
Connected Clients	Shows the number of connected clients to FREEWAY DSL.
Firewall	Shows the status of Firewall
Physical Port Status	
PORT-0	Shows the port status of FREEWAY DSL.
Information	
Bootloader Version	Shows the current version loaded.
BSP Version	Shows the current version loaded.
ADSLRT Software Version	Shows the current version of ADSL CPE loaded on the device.
ADSLRT Tool Chain Version	Shows the current tool chain version used to generate the software image.
ADSLRT Firmware Version	Shows the current version of ADSL firmware loaded on the device.

4. Advanced Setup

This chapter is only for Administrators. The Homepage is the first screen displayed when you log on to the FREEWAY DSL Web Application. To log on to the Web Application, you must have a valid user name and password. To continue configuring Web Application, click on Advanced Setup.

Advanced setup page in Web Application allows you to configure features like Firewall, routing, VoIP etc. Click "Advanced Setup" link found on top in the homepage. The following modules are displayed in the left navigation bar:

- System
- Statistics
- ADSL
- WAN
- LAN
- Firewall
- NAT
- Device Management


Home | Logout
System
Statistics
ADSL
WAN
LAN
Firewall
NAT
Device Management
Setup
The ADSLRT setup supports advanced features like LAN side configuration, Wan Side configuration Routing management, NAT, Device Management etc. Click on Help button for more details.
It is recommended to keep most of the ADSLRT default settings.

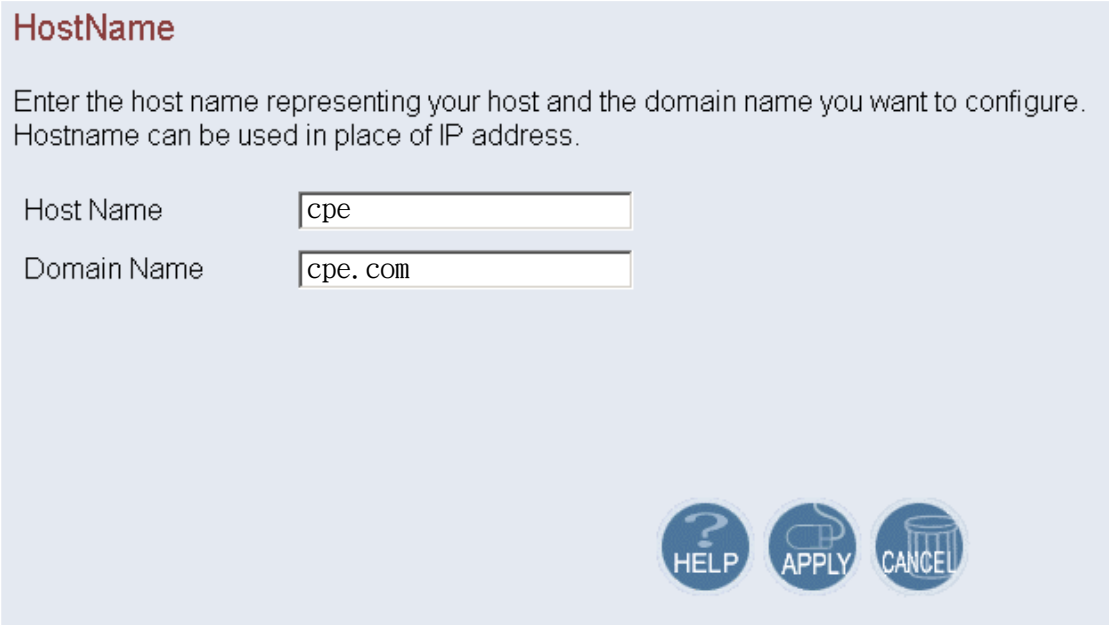
4.1 System

You can view the **System** from the left navigation bar. The following options are available under System:

- Host Name Configuration
- System Time
- Administrator Settings
- Firmware Upgrade
- Configuration Settings
- System Log
- Reset

4.1.1 Host Name Config

To configure System settings, you have to enter host and domain name. Click **Host Name Config** link (**System** > **Host Name Config**) in the left navigation bar, a screen is displayed below:

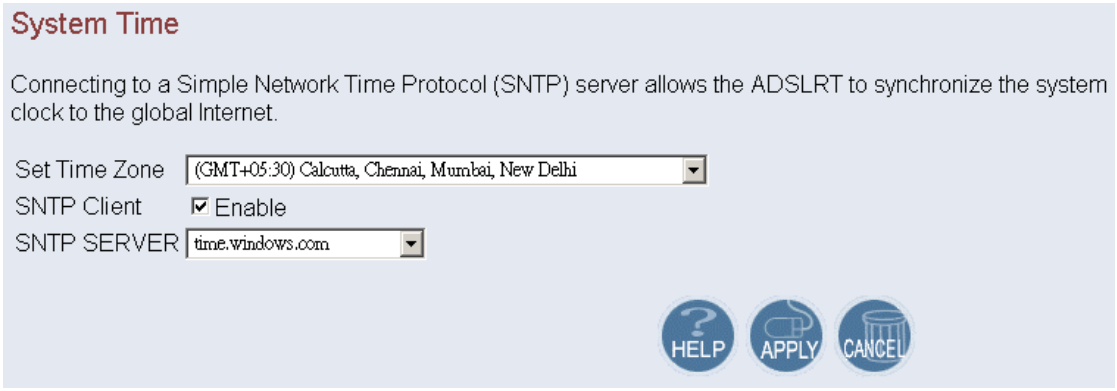


The screen contains the following details:

Field	Description
Host Name	To enter the host name of the FREEWAY DSL. This is used to address FREEWAY DSL by using this name instead of typing the IP address.
Domain Name	To enter the domain name of the FREEWAY DSL.

4.1.2 System Time

To configure your time zone and the SNTP (Simple Network Time Protocol) server, click on the **System Time** link (**System** > **System Time**) in the left navigation bar. A screen is displayed as shown below.

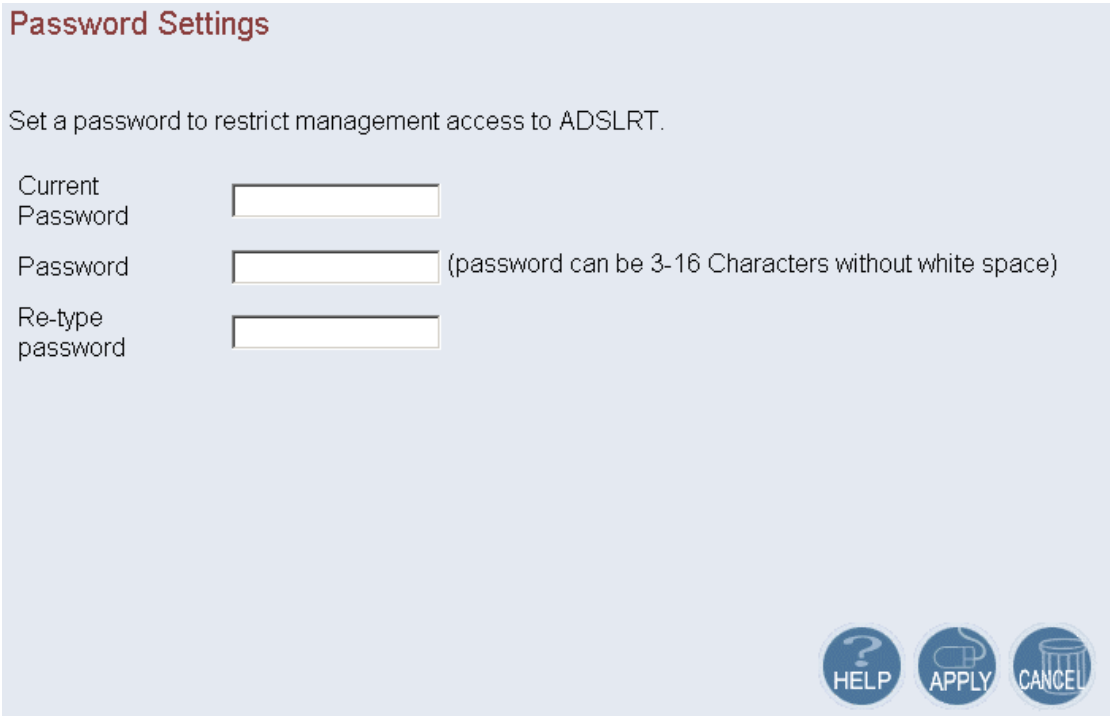


The screen contains the following details:

Field	Description
Set Time Zone	Select the time zone where you resident.
SNTP Client	To enable/disable SNTP client function. You must enable SNTP client to allow updating system clock.
SNTP Server	Select the network time server for the FREEWAY DSL to synchronized with.

4.1.3 Administrator Settings

To change the password for the administrator, click on the **Administrator Settings** link (**System** > **Administrator Settings**) in the left navigation bar. A screen is displayed as shown below.

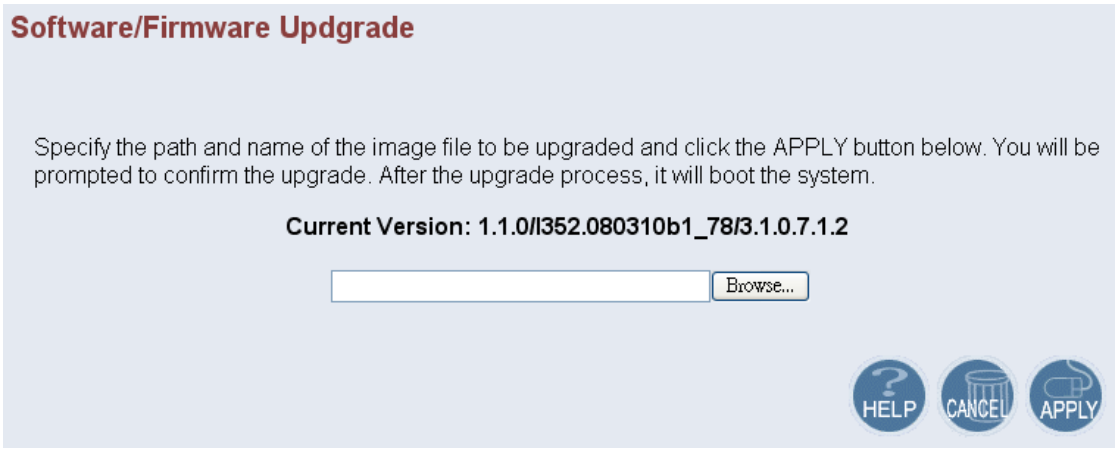


The screen contains the following details:

Field	Description
Current Password	Enter the current password the administrator used to login to the FREEWAY DSL.
Password	Enter the new password you want to change.
Re-type Password	Enter the new password again to confirm the password.

4.1.4 Firmware Upgrade

To update the system firmware, click on the **Firmware Upgrade** link (**System** > **Firmware Upgrade**) on the left navigation bar. A screen is displayed as shown below.


Software/Firmware Updgrade
Specify the path and name of the image file to be upgraded and click the APPLY button below. You will be prompted to confirm the upgrade. After the upgrade process, it will boot the system.
Current Version: 1.1.0/I352.080310b1_78/3.1.0.7.1.2
Browse...
HELP
CANCEL
APPLY

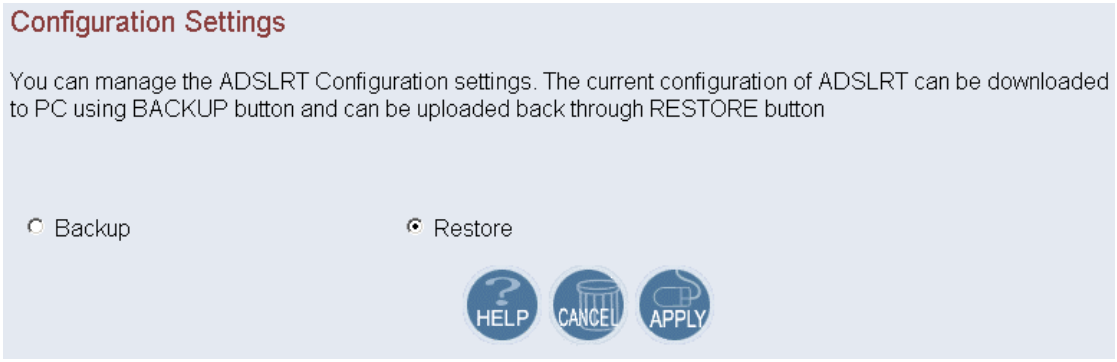
To upgrade firmware, please follow the following instructions:

1. Click the **Browse** button to select the firmware file.
2. Confirm your selection.
3. Click the **APPLY** button to start upgrading.

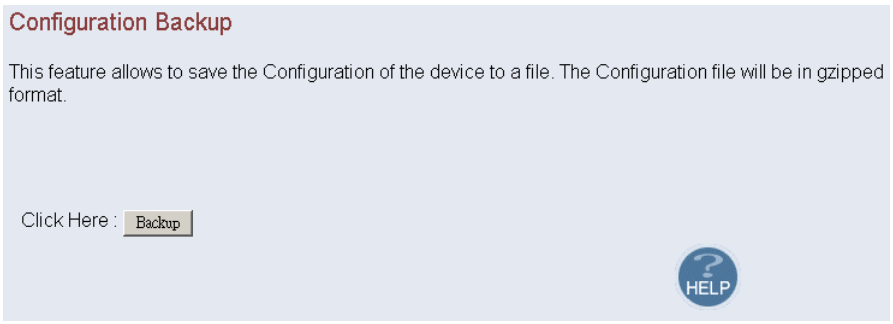
IMPORTANT! Do NOT power off the FREEWAY DSL or press the Reset button while this procedure is in progress.

4.1.5 Configuration Settings

To backup your current configuration or restore a previously saved configuration, click on the **Configuration Settings** link (**System** > **Configuration Settings**) in the left navigation bar. A screen is displayed as shown below.


Configuration Settings
You can manage the ADSLRT Configuration settings. The current configuration of ADSLRT can be downloaded to PC using BACKUP button and can be uploaded back through RESTORE button
Backup
Restore
HELP
CANCEL
APPLY

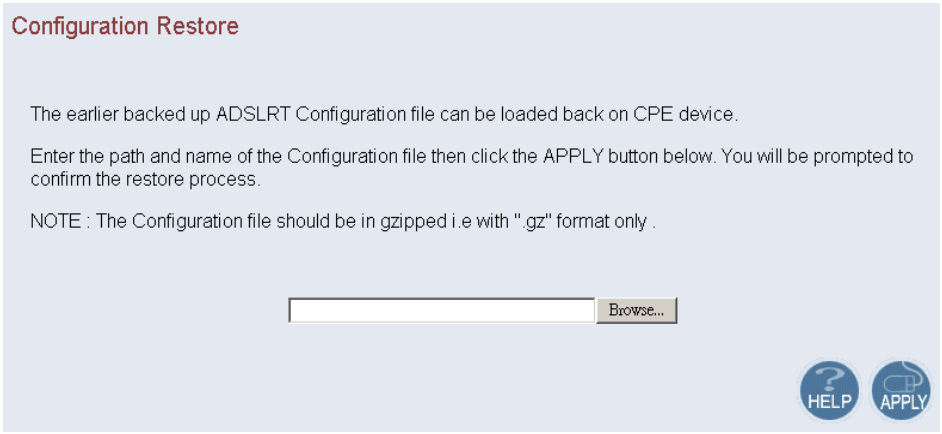
Backup
To backup your current configuration, select **Backup** radio button and click **APPLY**. The backup screen is displayed as shown below.


Configuration Backup
This feature allows to save the Configuration of the device to a file. The Configuration file will be in gzipped format.
Click Here :
Backup
HELP

To backup your current configuration, please follow the following instructions:
1. Click the **Backup** button to backup the configuration file.
2. Select the location to save the file. The file will be in gzipped (.gz) format.

IMPORTANT! Do NOT power off the FREEWAY DSL or press the Reset button while this procedure is in progress.

Restore
To restore a previously saved configuration, select **Restore** radio button and click **APPLY**. The restore screen is displayed as shown below.

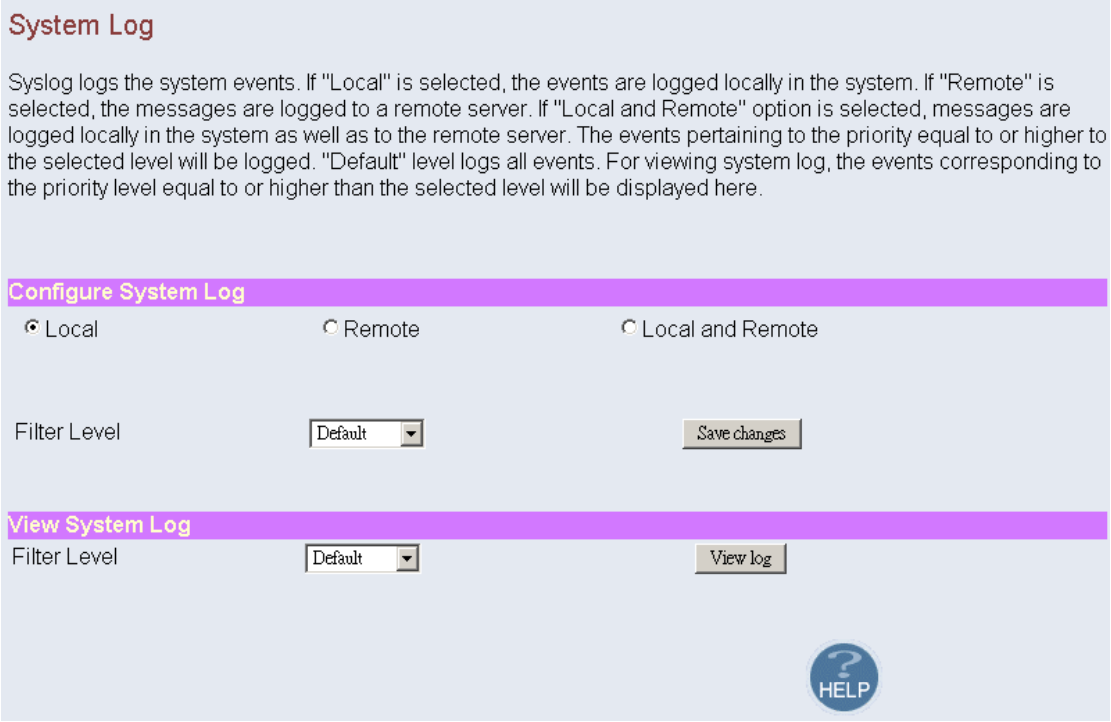

Configuration Restore
The earlier backed up ADSLRT Configuration file can be loaded back on CPE device.
Enter the path and name of the Configuration file then click the APPLY button below. You will be prompted to confirm the restore process.
NOTE : The Configuration file should be in gzipped i.e with ".gz" format only .
Browse...
HELP
APPLY

To restore a previously saved configuration, please follow the following instructions:
1. Click the **Browse** button to select the firmware file.
2. Confirm your selection.
3. Click the **APPLY** button to start upgrading.

IMPORTANT! Do NOT power off the FREEWAY DSL or press the Reset button while this procedure is in progress.

4.1.6 System Log

To view the system logs, click on the **System Log** link (**System** > **System Log**) in the left navigation bar. A screen is displayed as shown below.

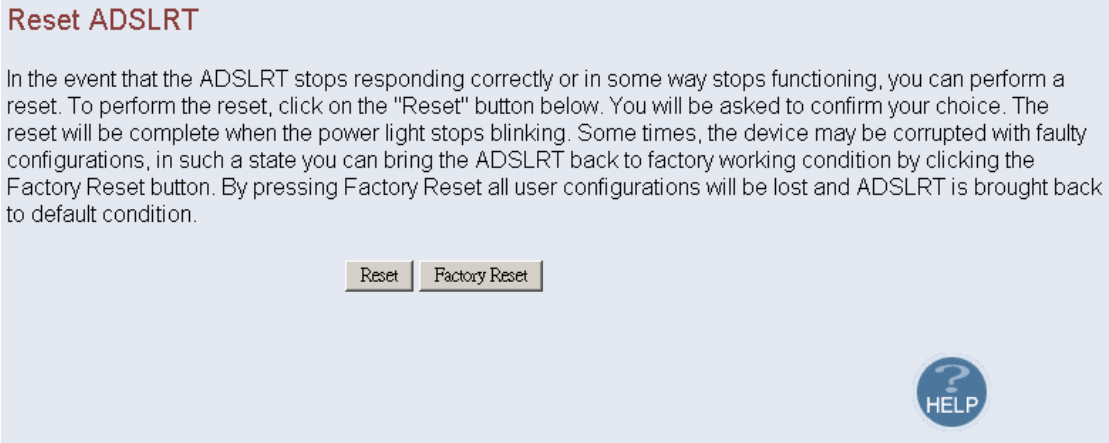

System Log
Syslog logs the system events. If "Local" is selected, the events are logged locally in the system. If "Remote" is selected, the messages are logged to a remote server. If "Local and Remote" option is selected, messages are logged locally in the system as well as to the remote server. The events pertaining to the priority equal to or higher to the selected level will be logged. "Default" level logs all events. For viewing system log, the events corresponding to the priority level equal to or higher than the selected level will be displayed here.
Configure System Log
Local
Remote
Local and Remote
Filter Level
Default
Save changes
View System Log
Filter Level
Default
View log
HELP

The screen contains the following details:

Field	Description
Configure System Log	Select the location to log the events. • **Local**: The events are logged locally in the system. • **Remote:** The events are logged to a remote server. You must specify the IP address of remote server and UDP port number. • **Local and Remote:** The events are logged locally in the system and the remote server.
Filter Level	Select the log level to record from the drop-down list.
Save Changes	Click this button to confirm the filter level you select.
View System Log	Select the log level to view from the drop-down list.
View Log	Click this button to view recorded logs.
System Log	In the System Log records page, you can: • Click **Download** to download the log file to your computer. • Click **Clear** to clear this page. • Click **Refresh** to retrieve system event and update the log file. • Click **Back** to return to System Log configuration page.

4.1.7 Reset

To reboot the system, click on the **Reset** link (**System** > **Reset**) in the left navigation bar. A screen is displayed as shown below.


Reset ADSLRT
In the event that the ADSLRT stops responding correctly or in some way stops functioning, you can perform a reset. To perform the reset, click on the "Reset" button below. You will be asked to confirm your choice. The reset will be complete when the power light stops blinking. Some times, the device may be corrupted with faulty configurations, in such a state you can bring the ADSLRT back to factory working condition by clicking the Factory Reset button. By pressing Factory Reset all user configurations will be lost and ADSLRT is brought back to default condition.
Reset
Factory Reset
HELP

- Click **Reset** to reboot the system without change any settings.
- Click **Factory Reset** to reboot the system with default factory settings.

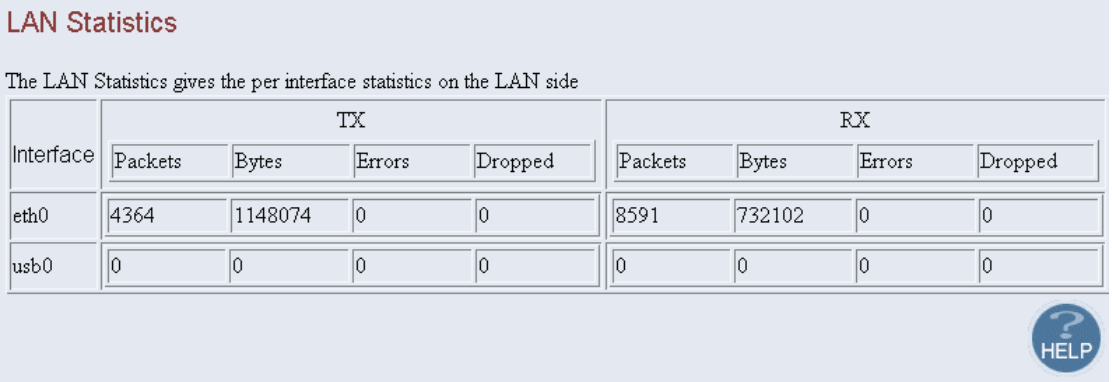
4.2 Statistics

The **Statistics** contains the statistics of every interface. The following are the options available under Statistics:

- LAN
- WAN

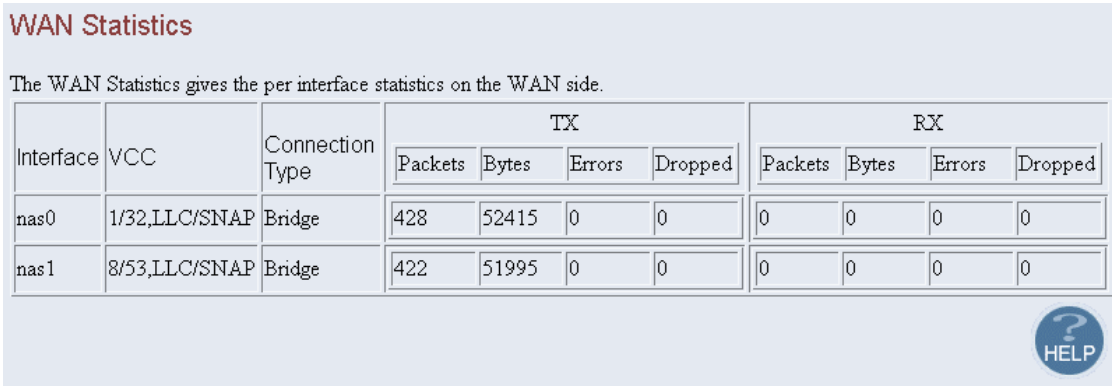
4.2.1 LAN Statistics

To view the LAN statistics, click on the **LAN** link (**Statistics** > **LAN**) in the left navigation bar. A screen is displayed as shown below.



4.2.2 WAN Statistics

To view the WAN statistics, click on the **WAN** link (**Statistics** > **WAN**) in the left navigation bar. A screen is displayed as shown below.



4.3 ADSL

You can view the **ADSL Settings** from the left navigation bar. The following are the options available under ADSL:

- ADSL Status
- ADSL PHY Configuration

4.3.1 ADSL Line Status

To view the ADSL line status, click on the **ADSL Status** link (**ADSL** > **ADSL Status**) in the left navigation bar. A screen is displayed as shown below.

ADSL Line Status

Provides detailed information about ADSL line's current attributes

ATU-C System Verdor Information	
Vendor ID	(00,00,00,00,00,00,00,00)
Vendor Version Number	(00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00)
Vendor Serial Number	(00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00)

Status	
Modem Status	SILENT
Mode Selected	
Power Management Mode	DSL_G997_PMS_L3
Trellis-Coded Modulation	Disable
Latency Type	Fast

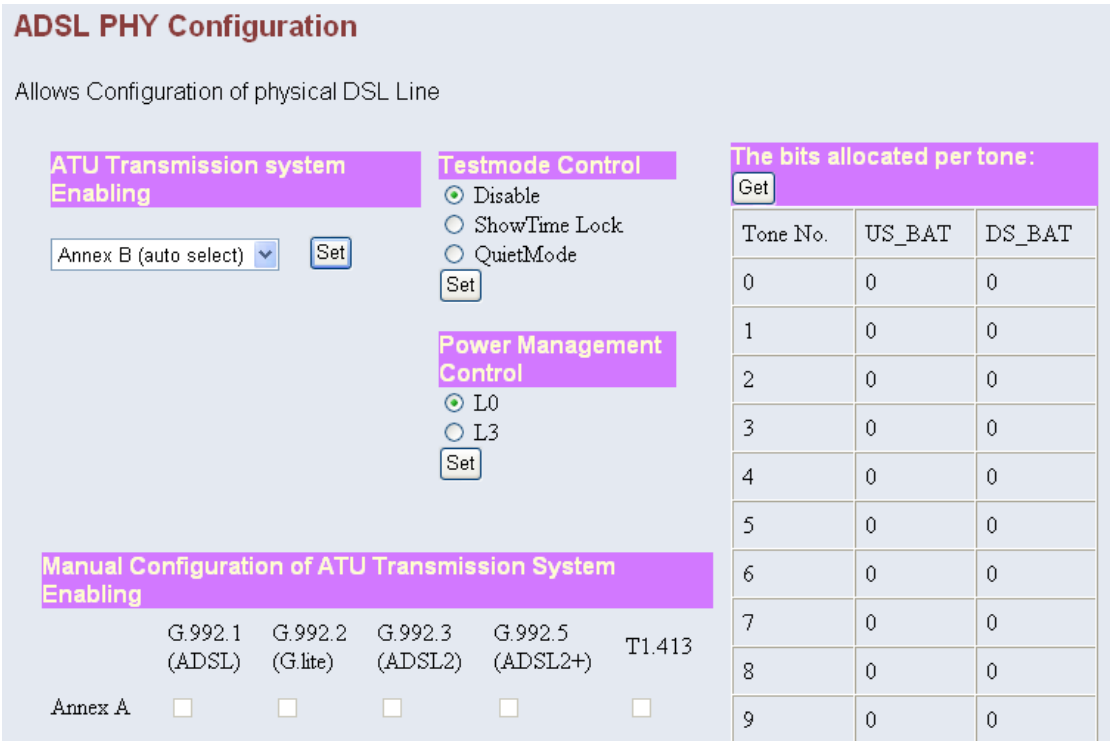
Rate		
	Downstream	**Upstream**
Data Rate	0 kbps	0 kbps
Maximum Attainable Data Rate(ATTNDR)	0 kbps	0 kbps

The screen contains the following details:

Field	Description
ATU-C System Vendor Information	Displays the Vendor ID, Version Number and the Serial Number of the ATU-C (DSLAM).
Status	Displays the status of the physical ADSL Line in terms of the modem, mode selected, Trellis-Coded Modulation and the Latency Type.
Rate	Displays the data rate and the maximum attainable data rate.
Information	Displays the information about the ADSL line, in terms of Line Attenuation, Signal Attenuation, Signal to Noise Ratio and other such parameters.
Performance	Displays the performance of the physical ADSL line.

4.3.2 ADSL PHY Configuration

To configure the PHY (physical layer) settings, click on the **ADSL PHY Configuration** link (**ADSL** > **ADSL PHY Configuration**) in the left navigation bar. A screen is displayed as shown below.



The screen contains the following details:

Field	Description
ATU Transmission system Enabling	Select the Annex mode from the drop-down list. The mode you select will reflect to the matrix of *Manual Configuration of ATU Transmission System Enabling* Table below.
Testmode Control	Select the test mode control method: • **Disable** • **Showtime Lock:** Showtime lock is used for firmware debug. if the showtime lock enable, the autoboot daemon will not reset arc when the arc reach showtime and need to reboot. The following sequence must be followed: 1. Reboot 2. Enter Showtime state 3. Check for the absence of upstream showtime signal. 4. Click **Showtime Lock** button. After that, the message "ShowtimeLock Configuration successful" appears. 5. Unplug the DSL line 6. Check for the presence of upstream showtime signal. *Note: The showtime signal is persistent and no ADSL DFE reboot happens. Press **Get** button to display the bits allocated per tone.* • **Quiet Mode:** Quiet mode is used for firmware debug. if the quiet mode enable, the autoboot daemon will not reset arc when the arc need to reboot. The following sequence must be followed: 1. Reboot and then check for the presence of handshake tones. 2. Click **Quiet Mode** button, the message "QuietMode Configuration Successful!" appears. 3. Check for the absence of handshake tones.

	Note: HS tones disappear, the waveform becomes idle and no retrain happens.
Power Management Control	• **L0:** The L0 state is the mode of normal operation. The full data rate for a given environment can only be achieved when the ADSL link is in the L0 state. • **L3:** The L3 state is the mode when no signal is transmitted on the line, and thus no transmission of information is possible.
Bits Allocated per Tone	
US BAT / DS BAT	Displays the bit allocation status of a specific tone and each ADSL tone.

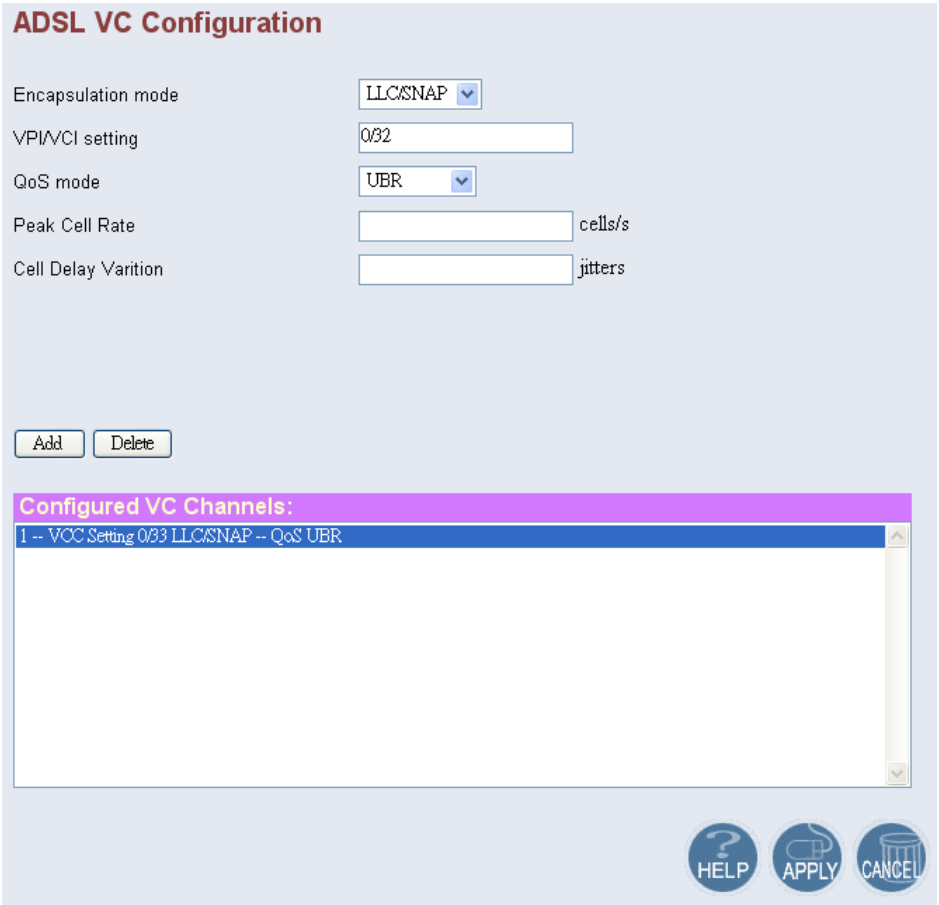
4.4 WAN

You can view **WAN settings** from the left navigation bar. The following are the options available under WAN:

- VC Configuration
- WAN Setting
- WAN Status
- DNS (Domain Name Server)
- WAN VLAN Config
- OAM Configuration

4.4.1 ADSL VC Configuration

To configure the ATM PVC (Permanent Virtual Connection) settings, click on the **VC Configuration** link (**WAN** > **VC Configuration**) in the left navigation bar. A screen is displayed as shown below.

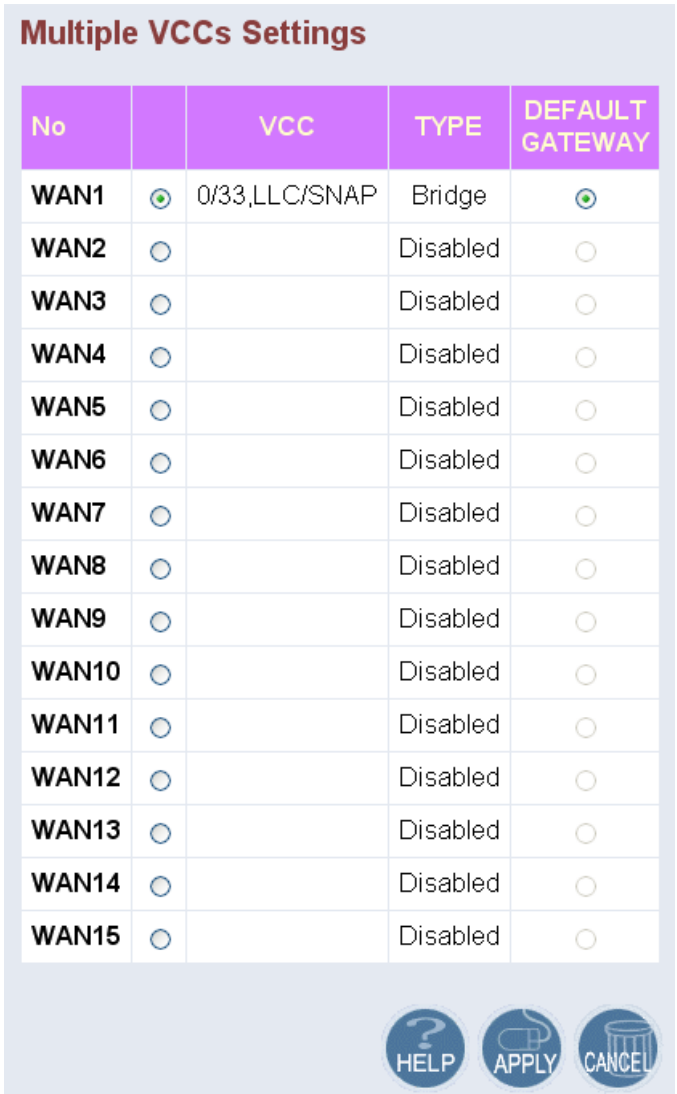


The screen contains the following details:

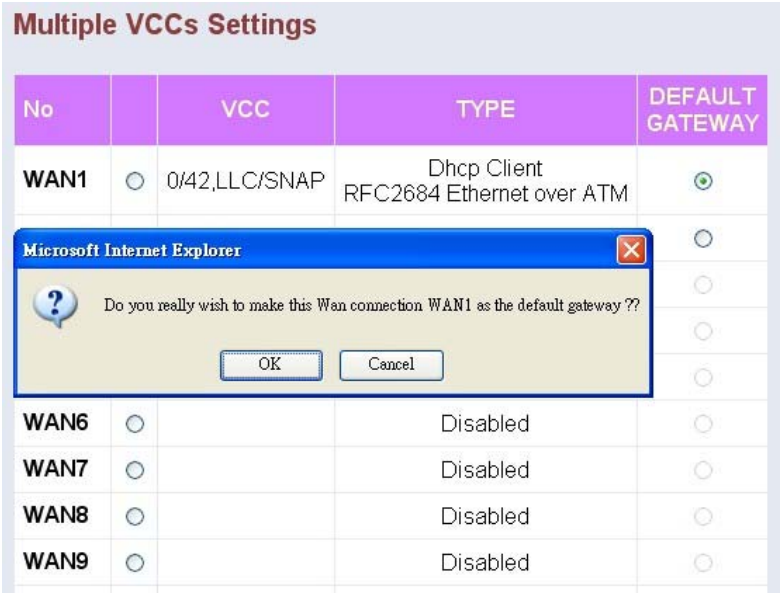
Field	Description
Encapsulation Mode	The encapsulation can be configured to: • LLC/SNAP • VCMUX
VPI/VCI setting	To enter the VPI and VCI provided by your ISP.
QoS Mode	FREEWAY DSL Supports the following ATM QoS traffic classes per VC: • **UBR**: Unspecified Bit Rate. • **CBR**: Constant Bit Rate. • **NRT-VBR**: Variable Bit Rate-non real time. When you select this option for QoS mode, the following additional fields become available: Minimum Cell Rate, Sustainable Cell Rate, Maximum Burst Size. • **RT-VBR**: Variable Bit Rate-real time. When this option is selected for QoS mode, the following additional fields become available: Sustainable Cell Rate, Maximum Burst Size. • **UBR+**: This is a special service class derived from UBR. When QoS Mode is set to this option, the following field appears additionally: Minimum Cell Rate.
Peak Cell Rate	This parameter is required for all ATM traffic classes and is configured in cells/s.
Cell Delay Variation	This parameter is required for VBR-rt (Variable Bit Rate - real time) connections. It will only be displayed for this traffic class. The value is specified in ms to specify the maximum allowed jitter.

4.4.2 WAN Settings

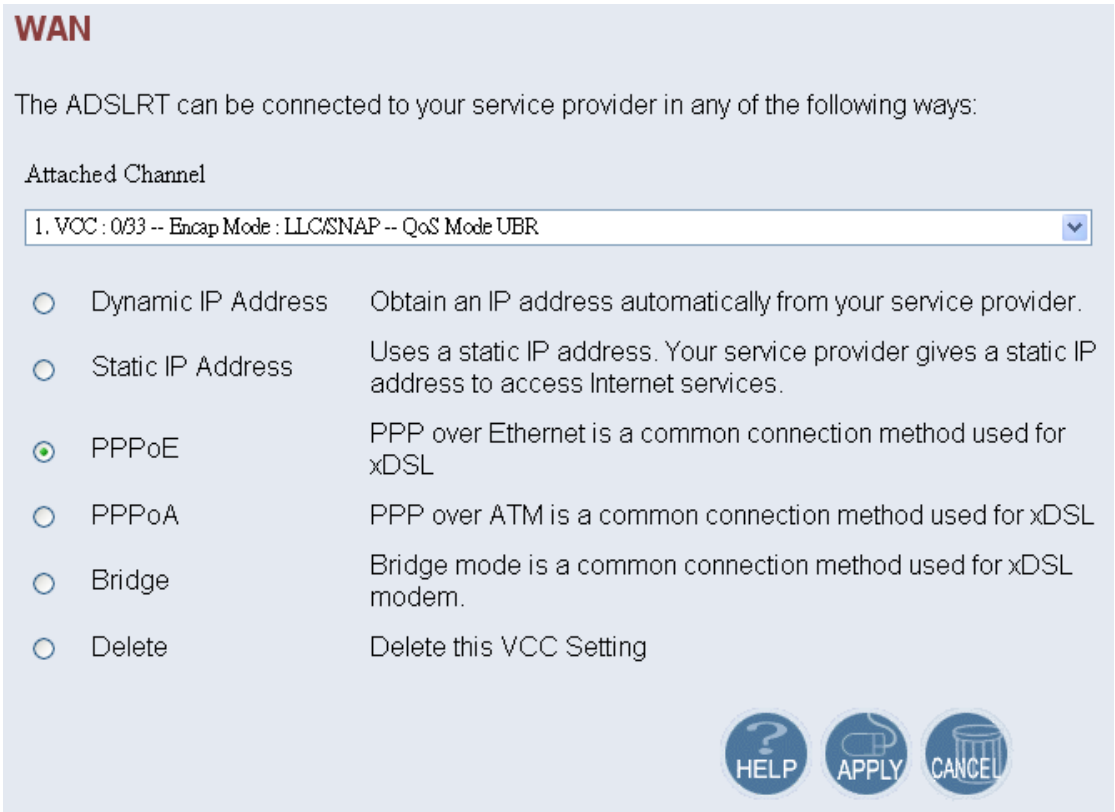
To configure the WAN interface, click on the **WAN Setting** link (**WAN** > **WAN Setting**) on the left navigation bar. A screen is displayed as shown below.
FREEWAY DSL supports up to 15 VCCs. This page shows the default interface and the default gateway configured on the device. You can click on any of the radio buttons to select the default interface or the default gateway.



You can choose one of the WAN interfaces being configured and then click **APPLY**. The WAN configuration screen will then displayed as shown below.
This page shows the action performed on clicking any radio button for default interface or default gateway. Once you click on any of the radio buttons you will be asked to confirm the same. If click OK the default interface or the default gateway will be configured on the WAN connection selected. Otherwise changes will not be applied.



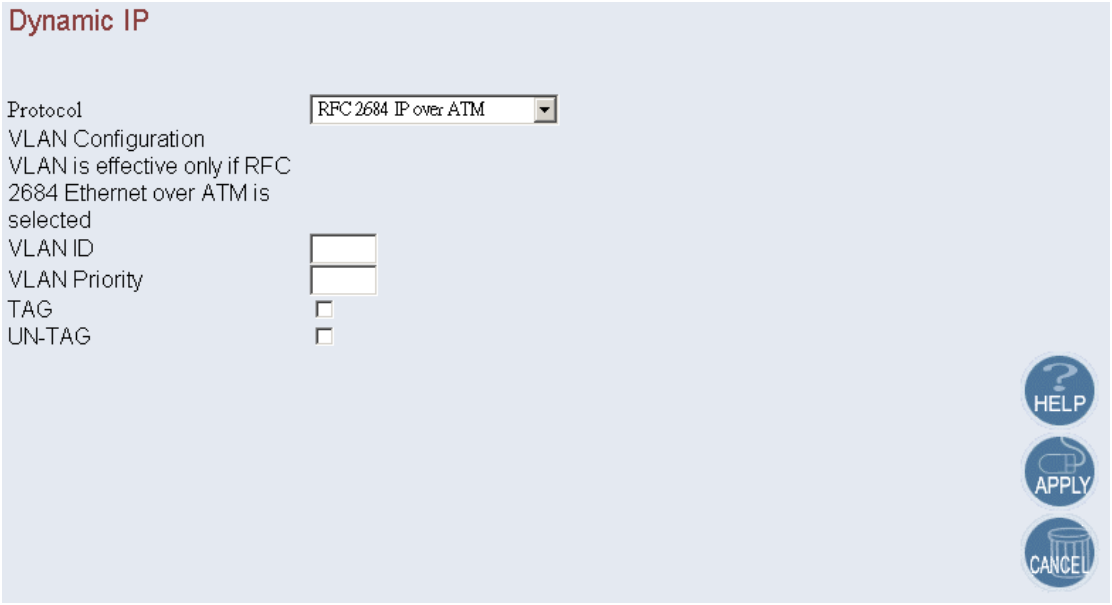
The WAN Settings screen contains the details as shown below.


WAN
The ADSLRT can be connected to your service provider in any of the following ways:
Attached Channel
1. VCC : 0/33 -- Encap Mode : LLC/SNAP -- QoS Mode UBR
Dynamic IP Address
Obtain an IP address automatically from your service provider.
Static IP Address
Uses a static IP address. Your service provider gives a static IP address to access Internet services.
PPPoE
PPP over Ethernet is a common connection method used for xDSL
PPPoA
PPP over ATM is a common connection method used for xDSL
Bridge
Bridge mode is a common connection method used for xDSL modem.
Delete
Delete this VCC Setting
HELP
APPLY
CANCEL

The screen contains the following details:

Field	Description
Attached Channel	This is the PVC being configured.
Dynamic IP Address	To get your IP Address from your service provider (means FREEWAY DSL is DHCP client on the WAN) click **APPLY**.
Static IP Address	To enter the WAN interface IP Address of FREEWAY DSL enable this field and click **APPLY**.
PPPoE	Point-to-Point Protocol over Ethernet used for connecting to the ISP, click **APPLY**.
PPPoA	Point-to-Point Protocol over ATM used for connecting to the ISP, click **APPLY**.
Bridge	To enter the Bridge Configuration (RFC2684) of FREEWAY DSL enable this field and click **APPLY**.
Delete	To delete this VCC setting.

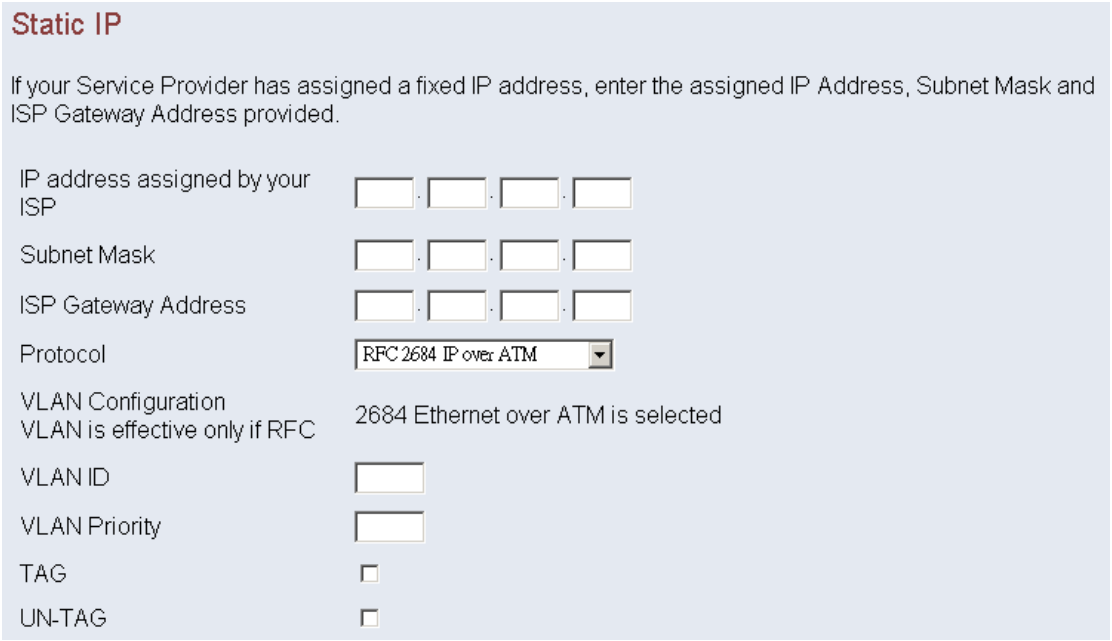
Dynamic IP
To configure the WAN interface to dynamically obtain an IP address, select the **Dynamic IP Address** button on the **WAN settings** page and click **APPLY**. A screen is displayed as shown below.



The screen contains the following details:

Field	Description
Protocol	This option allows to select the protocols: • RFC 2684 Ethernet over ATM • RFC 2364 IP over ATM
VLAN ID	To enter the VLAN ID for which membership needs to be added for the selected port.
VLAN Priority	Specify the priority of VLAN.
TAG	Tagging outgoing frames with VLAN-Tagged.
UN-TAG	Untagging outgoing frames with VLAN-Tagged.

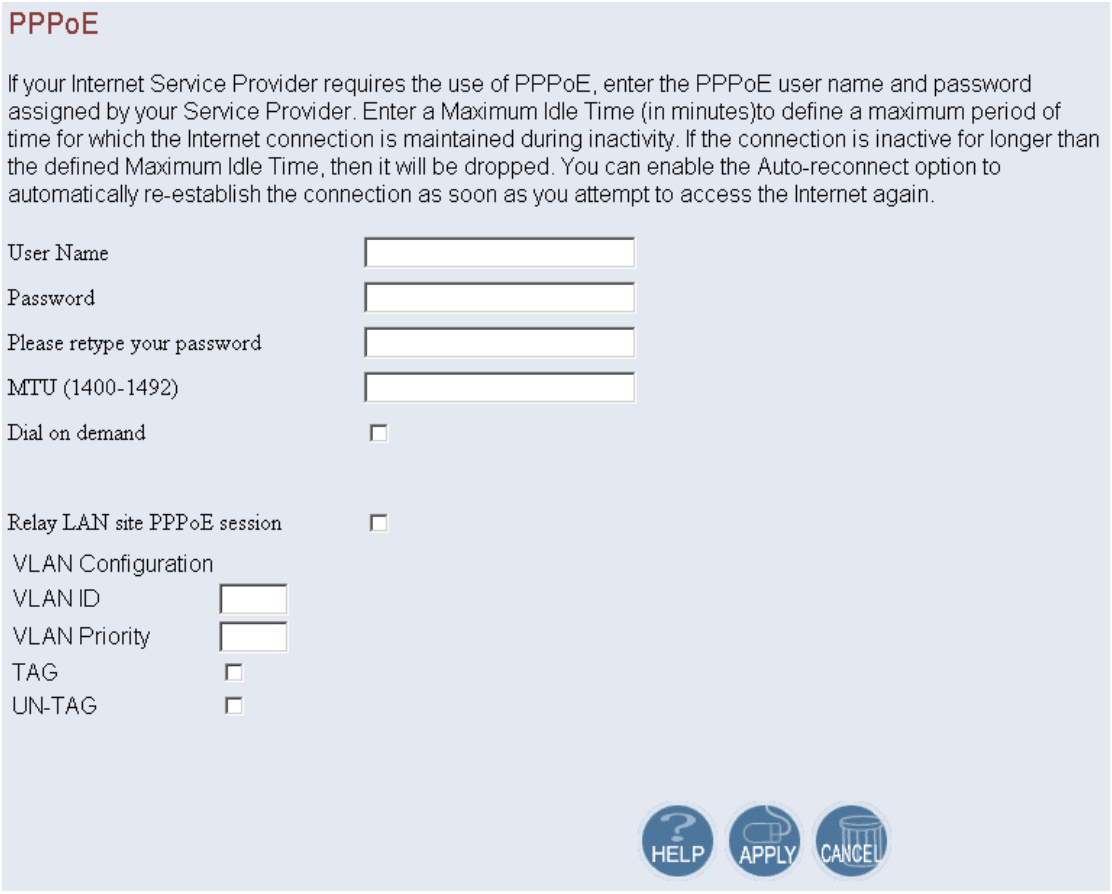
Static IP
To configure the WAN interface to use a static IP address, select the **Static IP Address** button on the **WAN settings** page and click **APPLY**. A screen is displayed as shown below.


Static IP
If your Service Provider has assigned a fixed IP address, enter the assigned IP Address, Subnet Mask and ISP Gateway Address provided.
IP address assigned by your ISP
Subnet Mask
ISP Gateway Address
Protocol
RFC 2684 IP over ATM
VLAN Configuration
VLAN is effective only if RFC
2684 Ethernet over ATM is selected
VLAN ID
VLAN Priority
TAG
UN-TAG

The screen contains the following details:

Field	Description
IP address assigned by your ISP	To enter the IP Address of FREEWAY DSL.
Subnet Mask	To enter the Subnet Mask of FREEWAY DSL.
ISP Gateway Address	To enter the Gateway address of the FREEWAY DSL.
Protocol	Select the supported Protocol: • Classic IP, which is the classical IP over ATM • RFC 2684 Ethernet over ATM • RFC 2684 IP over ATM
VLAN ID	To enter the VLAN ID for which membership needs to be added for the selected port.
VLAN Priority	Specify the priority of VLAN.
TAG	Tagging outgoing frames with VLAN-Tagged.
UN-TAG	Untagging outgoing frames with VLAN-Tagged.

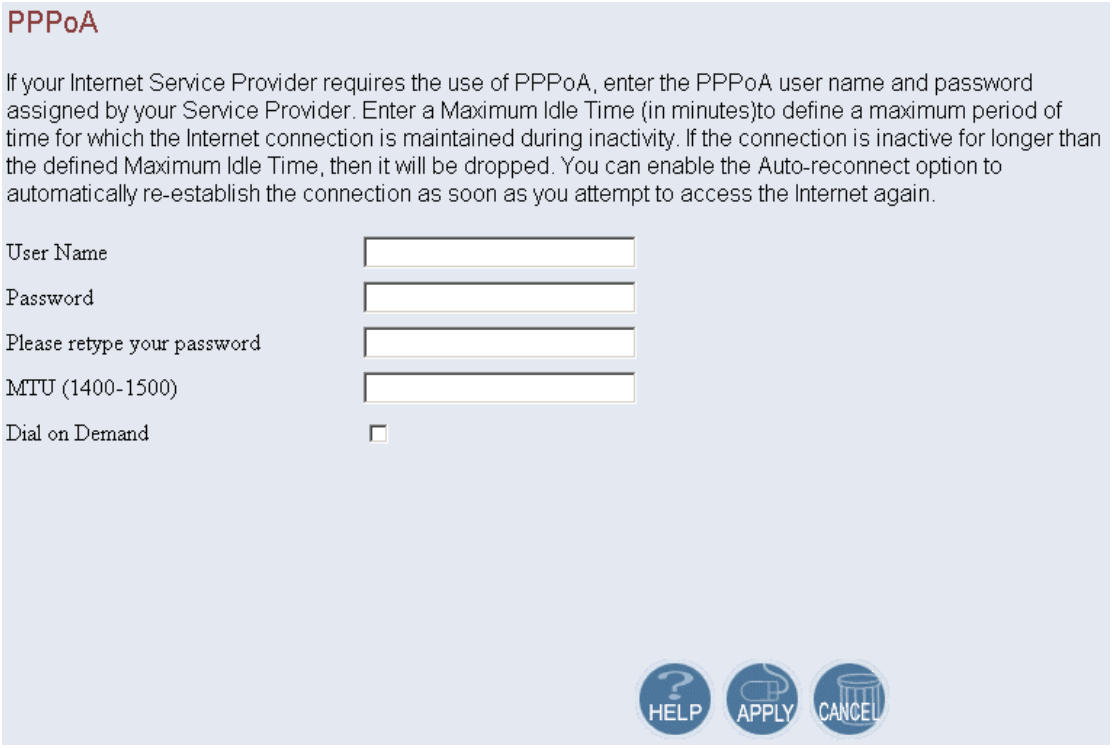
PPPoE
To configure the WAN interface to use PPPoE, select the **PPPoE** button on the **WAN settings** page and click **APPLY**. A screen is displayed as shown below.


PPPoE
If your Internet Service Provider requires the use of PPPoE, enter the PPPoE user name and password assigned by your Service Provider. Enter a Maximum Idle Time (in minutes)to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined Maximum Idle Time, then it will be dropped. You can enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.
User Name
Password
Please retype your password
MTU (1400-1492)
Dial on demand
Relay LAN site PPPoE session
VLAN Configuration
VLAN ID
VLAN Priority
TAG
UN-TAG
HELP
APPLY
CANCEL

The screen contains the following details:

Field	Description
User Name	To enter a name to use the PPPoE session.
Password	To enter a password of the login user.
Please retype your password	To enter the password again to reconfirm.
MTU (1400-1492)	To enter the maximum connection units of the PPPoE. The MTU range is 1400 to 1492 bytes.
Dial on Demand	This feature allows to automatically re-connect to the service provider once the connection was lost. Can be enabled or disabled.
Relay LAN site PPPoE Session	This feature allows to enable/disable a PPPoE relay session.
VLAN ID	To enter the VLAN ID for which membership needs to be added for the selected port.
VLAN Priority	Specify the priority of VLAN.
TAG	Tagging outgoing frames with VLAN-Tagged.
UN-TAG	Untagging outgoing frames with VLAN-Tagged.

PPPoA
To configure the WAN interface to use PPPoA, select the **PPPoA** button on the **WAN settings** page and click **APPLY**. A screen is displayed as shown below.


PPPoA
If your Internet Service Provider requires the use of PPPoA, enter the PPPoA user name and password assigned by your Service Provider. Enter a Maximum Idle Time (in minutes)to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined Maximum Idle Time, then it will be dropped. You can enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.
User Name
Password
Please retype your password
MTU (1400-1500)
Dial on Demand
HELP
APPLY
CANCEL

The screen contains the following details:

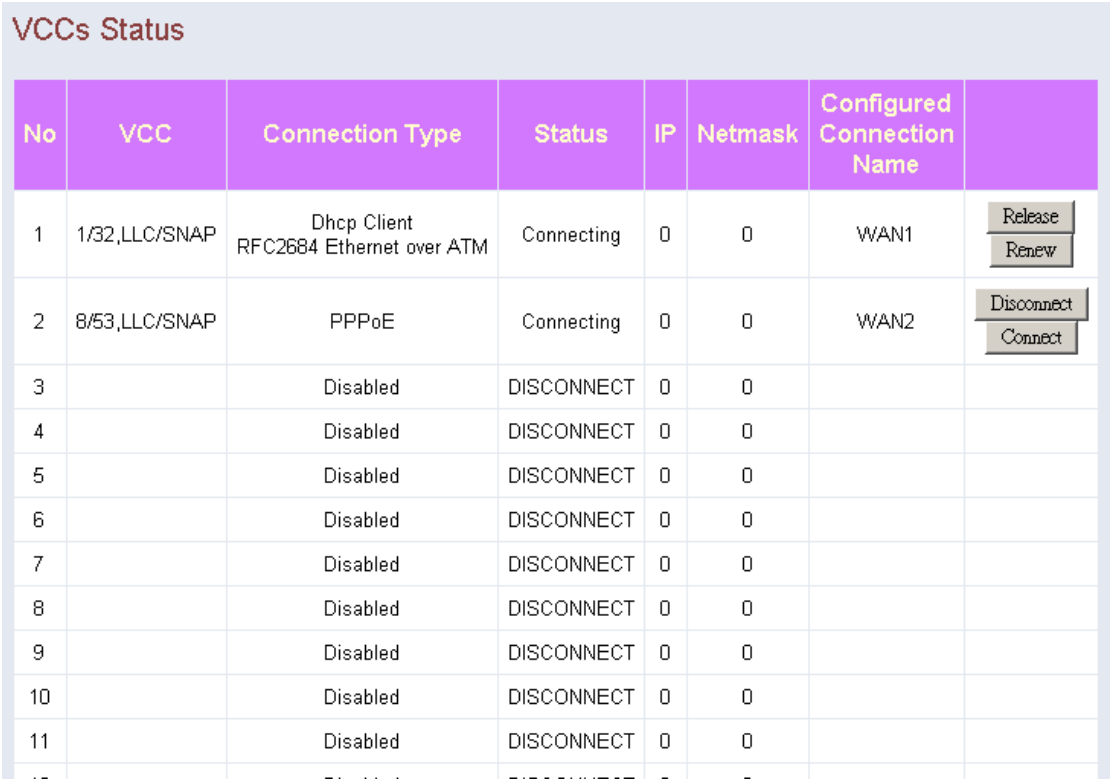
Field	Description
User Name	To enter a name to use the PPPoA session.
Password	To enter a password of the login user.
Please retype your password	To enter the password again to reconfirm.
MTU (1400-1500)	To enter the maximum connection units of the PPPoE. The MTU range is 1400 to 1500 bytes.
Dial on Demand	This feature allows to automatically re-connect to the service provider once the connection was lost. Can be enabled or disabled.

The option Bridge enables the bridge mode, which is a common connection method used for xDSL modem. The entire VCC setting can be disabled using the Disable option.

Bridge
The option Bridge enables the bridge mode, which is a common connection method used for xDSL modem. The entire VCC setting can be disabled using the Disable option. To configure the Bridge settings, select the **Bridge** button on the **WAN settings** page and click **APPLY**.

4.4.3 WAN Status

To view the WAN status, click on the **WAN Status** link (**WAN** > **WAN Status**) in the left navigation bar. A screen is displayed as shown below.



VCCs Status

No	VCC	Connection Type	Status	IP	Netmask	Configured Connection Name	
1	1/32,LLC/SNAP	Dhcp Client RFC2684 Ethernet over ATM	Connecting	0	0	WAN1	Release Renew
2	8/53,LLC/SNAP	PPPoE	Connecting	0	0	WAN2	Disconnect Connect
3		Disabled	DISCONNECT	0	0		
4		Disabled	DISCONNECT	0	0		
5		Disabled	DISCONNECT	0	0		
6		Disabled	DISCONNECT	0	0		
7		Disabled	DISCONNECT	0	0		
8		Disabled	DISCONNECT	0	0		
9		Disabled	DISCONNECT	0	0		
10		Disabled	DISCONNECT	0	0		
11		Disabled	DISCONNECT	0	0		

Field	Description
VCC	For the currently configured WAN interface, this gives the VPI/VCI and Encapsulation Method.
Connection Type	The type of the connection mode in which FREEWAY DSL is configured.
Status	Displays the connection status of the VCC.
IP	Displays the IP address in use.
Netmask	Displays the netmask in use.
Configured Connection Name	Displays the configured connection name
Gateway Information	Provides information about the gateway.
DNS Information	Provides information about the primary and secondary DNS.

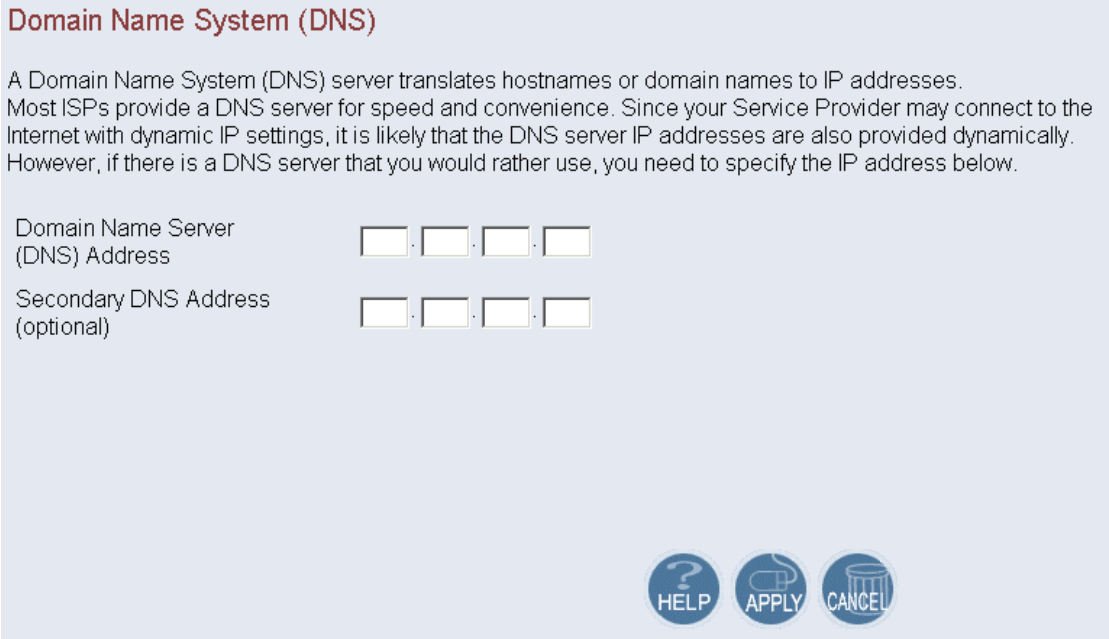
The control buttons shown against few VCCs are explained below.

Field	Description
Connect	This button appears only for VCCs of PPPoA and PPPoE type of WAN links. On clicking this button, it tries to establish PPP link.
Disconnect	This button too appears only for VCCs of PPPoA and PPPoE type of WAN links. On clicking this button, it brings down the PPP link.
Release	This button is shown against VCCs of Dynamic IP Address Type. On clicking this button, it releases the DHCP allocated IP address.
Renew	This button too appears for VCCs of Dynamic IP Address Type. On clicking this button, it tries to renew the DHCP lease of allocated IP address.

Note: The WAN links of other types like Static IP address or Bridge type can not be controlled from this web page.

4.4.4 Domain Name Server (DNS)

To configure the DNS address, click on the **DNS** link (**WAN** > **DNS**) in the left navigation bar. A screen is displayed as shown below:

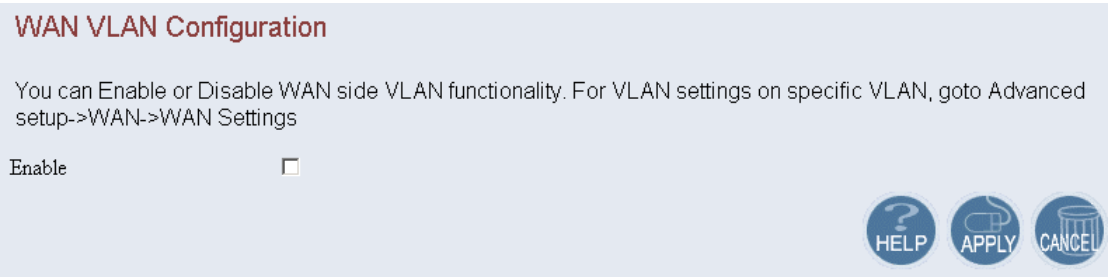

Domain Name System (DNS)
A Domain Name System (DNS) server translates hostnames or domain names to IP addresses.
Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP addresses are also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP address below.
Domain Name Server (DNS) Address
Secondary DNS Address (optional)
HELP
APPLY
CANCEL

The screen contains the following details:

Field	Description
Domain Name Server (DNS) Address	Enter the DNS address of the primary DNS server.
Secondary DNS Address (optional)	Enter the address of the secondary DNS server, if available.

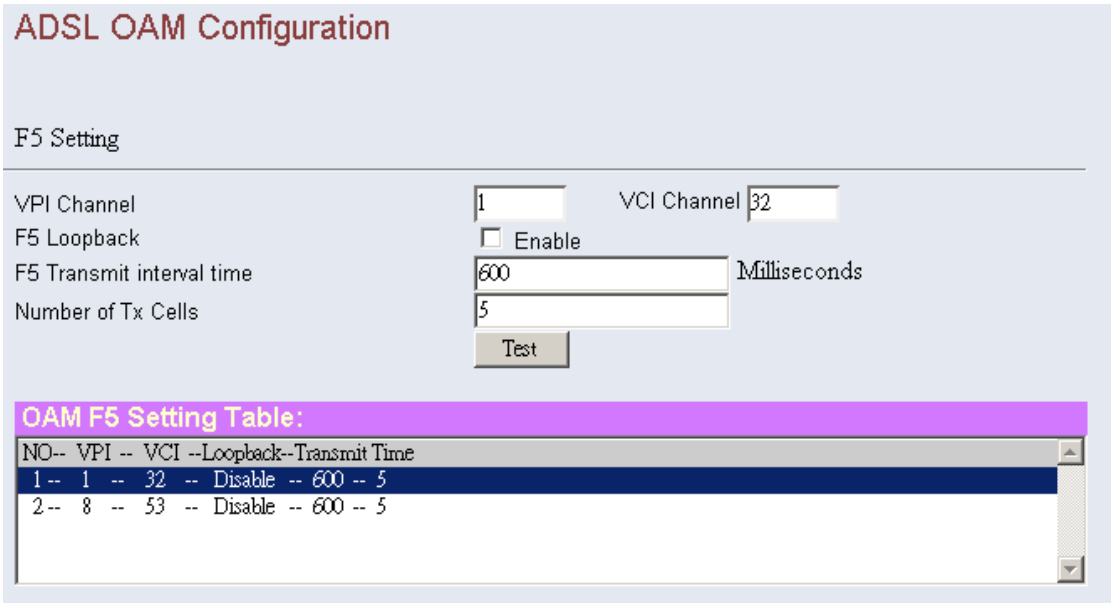
4.4.5 VLAN Configuration

To enable/disable VLAN function, click on the **WAN VLAN Config** link (**WAN** > **WAN VLAN Config**) in the left navigation bar. A screen is displayed as shown below:
For specific VLAN settings and deatil description, please go to **WAN** link (**WAN** > **WAN Setting**) in the left navigation bar.


WAN VLAN Configuration
You can Enable or Disable WAN side VLAN functionality. For VLAN settings on specific VLAN, goto Advanced setup->WAN->WAN Settings
Enable
HELP
APPLY
CANCEL

4.4.6 ADSL OAM Configuration

To configure the ADSL OAM settings, click on the **OAM Configuration** link (**WAN** > **OAM Configuration**) in the left navigation bar. A screen is displayed as shown below.



The screen contains the following details:

Field	Description
VPI Channel	Displays the selected VPI channel of the OAM F5 Setting Table.
VCI Channel	Displays the selected VCI channel of the OAM F5 Setting Table.
F5 Loopback	Used to enable/disable F5 Loopback.
F5 Transmit Interval time	Configures the time (in millisecond) for the interval to send F5 loopback cells.
Number of Tx Cells	Configure the number of tx cells to send in F5 loopback.
OAM F5 Setting Table	This table displays all active connections with the parameter information on: • **NO**: Number • **VPI**: Virtual Path Identifier • **VCI**: **Virtual Channel Identifier** • **Loopback**: Enabled or Disabled • **Transmit Time**: actual value in ms (millisecond)

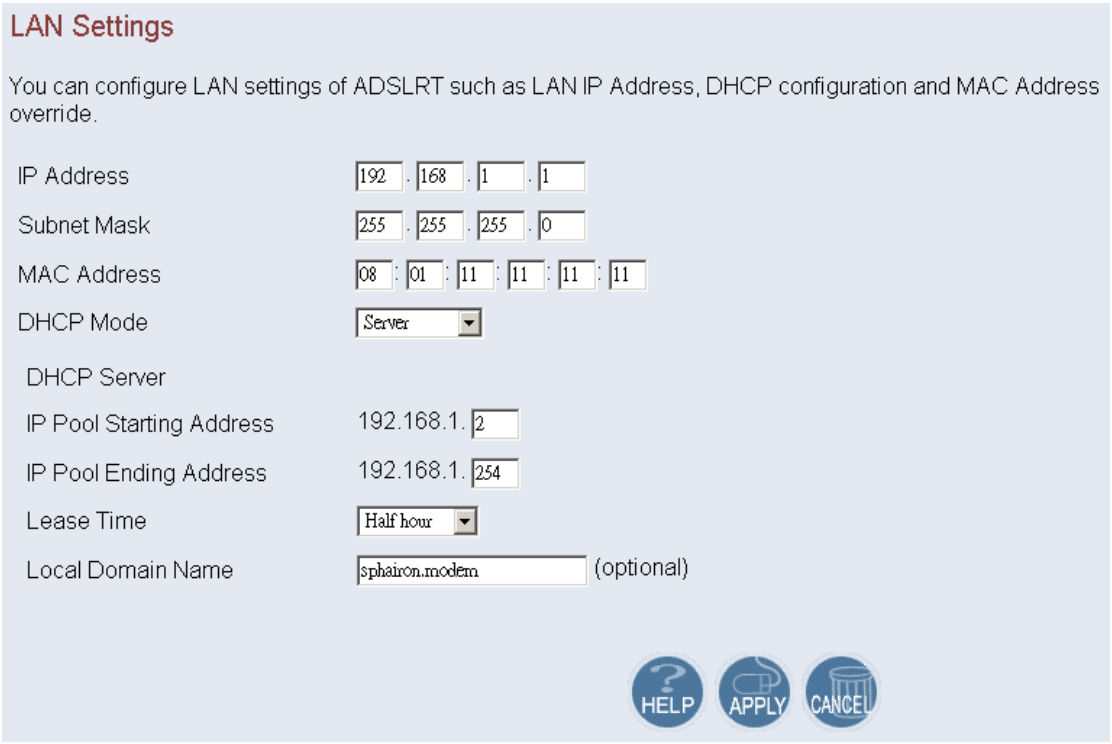
4.5 LAN

You can view **LAN Settings** from the left navigation bar. The following are the options available under LAN:

- LAN Settings
- DHCP Client List
- Static Routing
- Routing Table List
- IPv6

4.5.1 LAN Settings

To configure the LAN interface, click on the **LAN Settings** link (**LAN** > **LAN Settings**) in the left navigation bar. A screen is displayed as shown below.



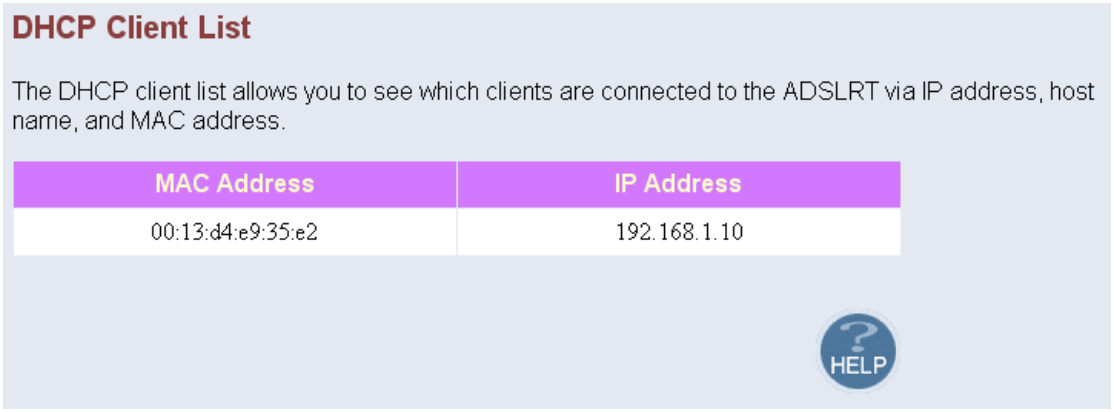
The screen contains the following details:

Field	Description
IP Address	Used to enter the LAN interface IP Address of FREEWAY DSL.
Subnet Mask	To enter the LAN Subnet Mask of FREEWAY DSL.
DHCP Mode	To set the DHCP Mode of the FREEWAY DSL server. The options available are: Disable, Server and Relay Agent. The default value is Disable. If DHCP Mode is set to Server, there are some additional options available: • **IP Pool Starting Address**: To enter the starting IP Address of the DHCP server pool. • **IP Pool Ending Address**: To enter the ending IP Address of the DHCP server pool. • **Lease Time**: To select the lease time of the DHCP server. • **Local Domain Name (optional)**: To enter the Domain Name of the DHCP server. If DHCP Mode is set to Relay Agent, there are some additional options available: • **DHCP Relay**: Select an interface for the relay. • **DHCP Server IP**: IP address of the DHCP server on the interface

	showed, to which the DHCP requests are relayed.
IP Pool Starting/Ending Address	Enter the starting and ending IP address of the DHCP pool. The first three fields are the network portion, and can be from 0-255, while the last field is the host portion and can be from 1-254.
Lease Time	The Lease time is the amount of time a network user will be allowed to connect with DHCP server.
Local Domain Name	You can specify a domain name for the network on which it resides.

4.5.2 DHCP Client List

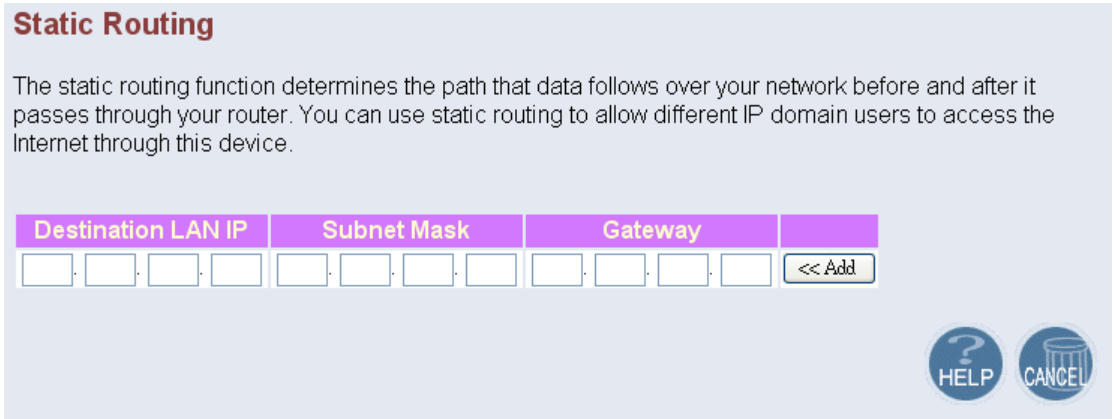
To view the DHCP client list, click on the **DHCP Client List** link (**LAN** > **DHCP Client List**) in the left navigation bar. A screen is displayed as shown below.


DHCP Client List
The DHCP client list allows you to see which clients are connected to the ADSLRT via IP address, host name, and MAC address.
MAC Address
IP Address
00:13:d4:e9:35:e2
192.168.1.10
HELP

Field	Description
MAC Address	Shows the MAC address of client that is connected to the FREEWAY DSL.
IP Address	Shows the IP address of client that is connected to the FREEWAY DSL.

4.5.3 Static Routing

To configure the Static Routing, click on the **Static Routing** link (**LAN** > **Static Routing**) in the left navigation bar. A screen is displayed as shown below.

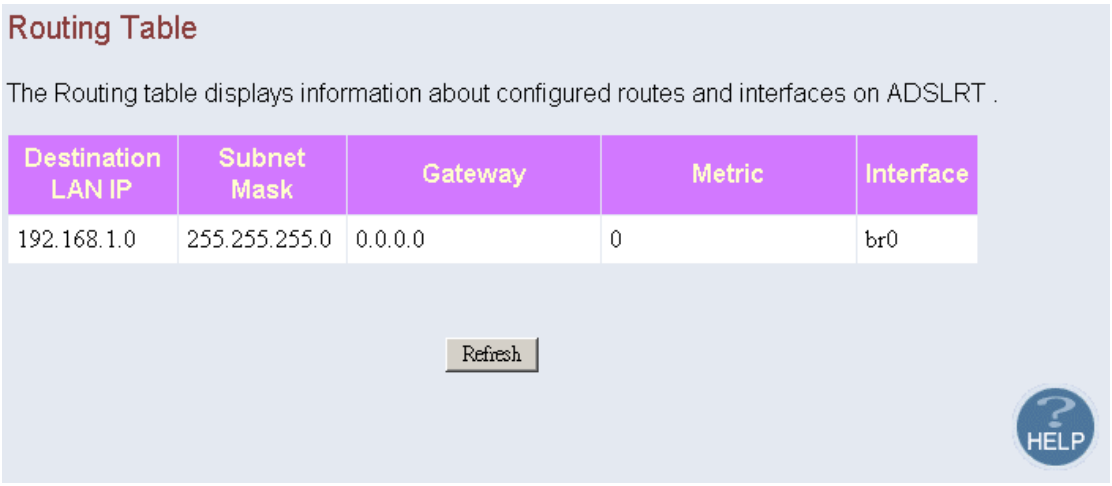

Static Routing
The static routing function determines the path that data follows over your network before and after it passes through your router. You can use static routing to allow different IP domain users to access the Internet through this device.
Destination LAN IP
Subnet Mask
Gateway
<< Add
HELP
CANCEL

The screen contains the following details:

Field	Description
Destination LAN IP	To enter the IP Address of routing entry.
Subnet Mask	To enter the Subnet Mask of routing entry.
Gateway	To enter the Gateway address of routing entry.

4.5.4 Routing Table List

To see the current Routing table list, click on the **Routing Table List** link (**LAN > Routing Table List**) in the left navigation bar. A screen is displayed as shown below.

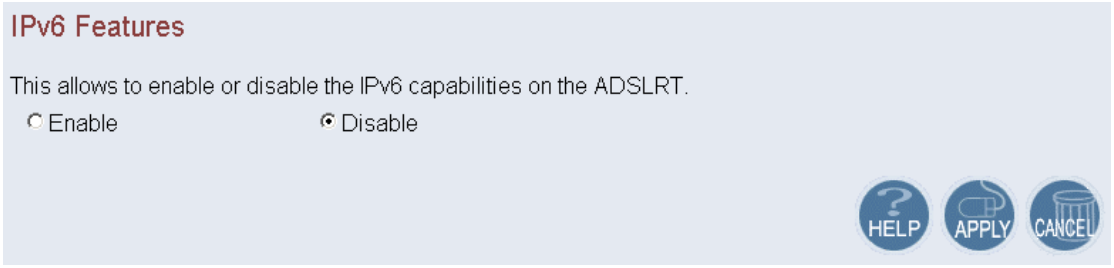


The screen contains the following details:

Field	Description
Destination LAN IP	Shows the IP Address of routing entry.
Subnet Mask	Shows the Subnet Mask of routing entry.
Gateway	Shows the Gateway address of routing entry.
Metric	Counts the number of hops.
Interface	This depends on the interfaces currently configured in the system. Possible values are: • **br0**: Bridge interface • **eth0**: First ethernet interface • **eth1**: Second ethernet interface (maybe connected to an external switch) • **nasi**: e.g. nas0. Ethernet over ATM interface • **pppi**: e.g. ppp0. PPPoE or PPPoA interface

4.5.5 IPv6

To enable/disableIPv6 function, click on the **IPv6** link (**LAN** > **IPv6**) in the left navigation bar. A screen is displayed as shown below.



The screen contains the following details:

Field	Description
IPv6	To enable/disable the IPv6 capabilities.

4.6 Firewall

You can view **Firewall Settings** from the left navigation bar. The following are the options available under Firewall:

- Firewall Setting
- Packet Filtering
- Parental Control
- Application Filtering
- Application Server Settings
- ACL (Access Control List)

4.6.1 Firewall Settings

To enable/disable the firewall options, click on the **Firewall Setting** link (**Firewall** > **Firewall Setting**) in the left navigation bar. A screen is displayed as below:

Firewall Setting
The ADSLRT provides extensive firewall protection by restricting connection parameters to limit the risk of intrusion and defending against a wide array of common hacker attacks. However, for applications that require unrestricted access to the Internet, you can configure a specific client/server as a demilitarized zone (DMZ).
Enable
Disable
HELP
APPLY
CANCEL

The screen contains the following details:

Field	Description
Firewall Setting	It allows to enable or disable the firewall.

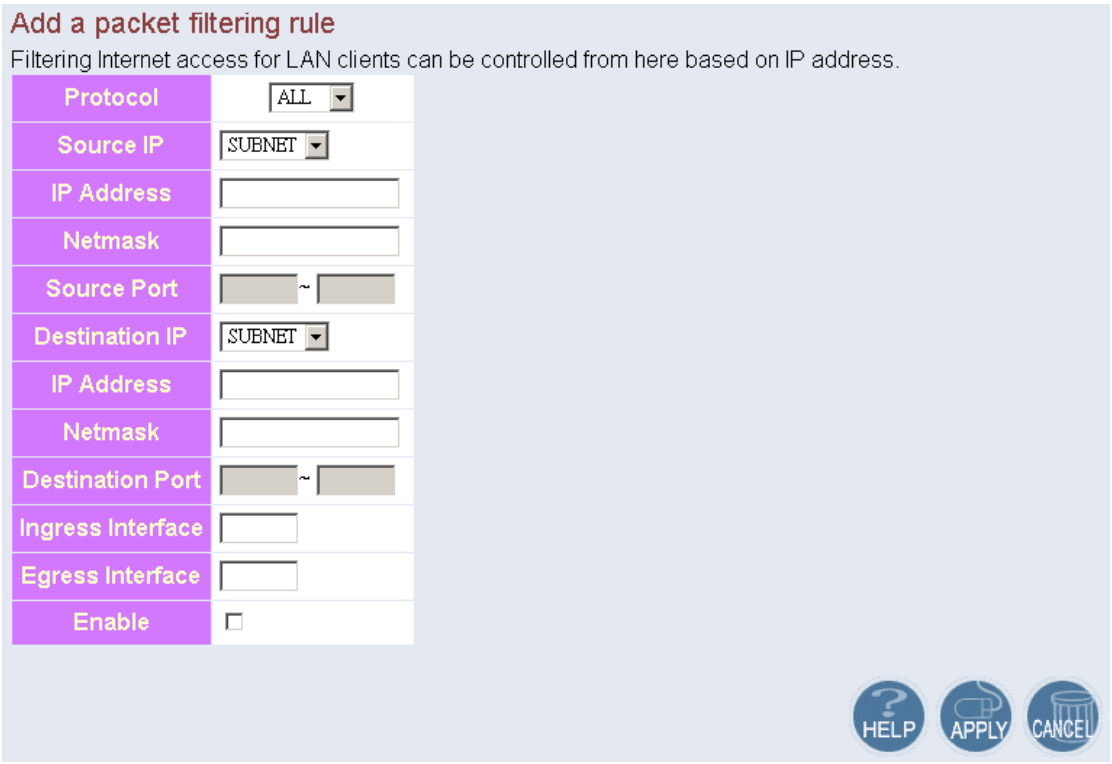
4.6.2 Packet Filtering

To enable/disable Packet Filter, click on the **Packet Filtering** link (**Firewall** > **Packet Filtering**) in the left navigation bar. A screen is displayed as shown below:

The screen contains the following details:

Field	Description
Enable Packet Filter	To enable or disable the Packet Filtering feature of FREEWAY DSL. To enable, select the check box.
Source IP	Filter IP Address range of the local machine under FREEWAY DSL.
Source Port	Filter Port number range of the local machine under FREEWAY DSL.
Destination IP	IP address of the destination.
Destination Port	Port address of the destination.
Protocol	This is used for filter protocol. Select TCP or UDP to filter the protocol type packets from the local machines.
Ingress Interface	Input interface of the packet. *Note: FREEWAY DSL does not provide support for ingress and egress interface configuration in packet filtering.*
Egress Interface	Output interface of the packet. *Note: FREEWAY DSL does not support for ingress and egress interface configuration in packet filtering.*
Enable	To provide more IP Addresses of the WAN interface.
Add	On pressing **Add** button, the screen shown in next page is displayed. The options available in the **Add a Packet Filtering Rule** window are described in next page.

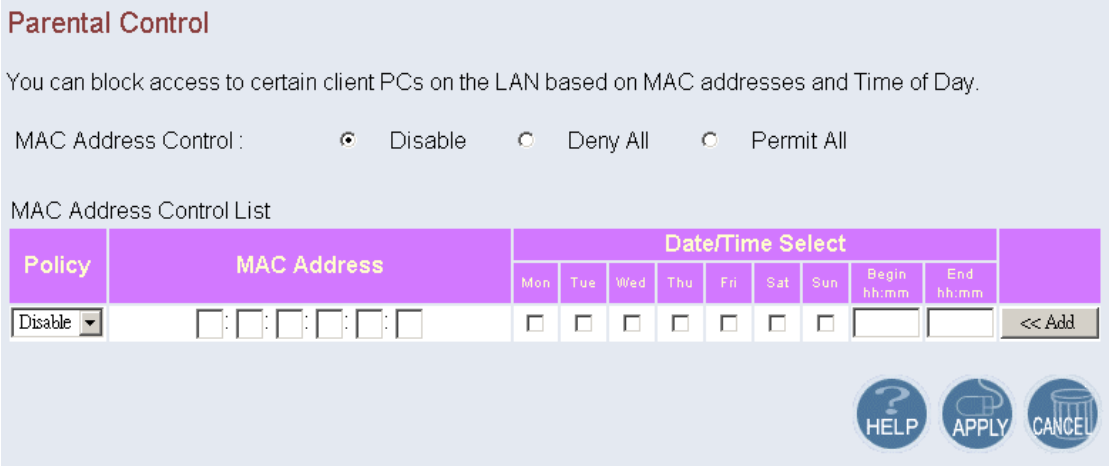
Add Packet Filtering Rule



Field	Description
Protocol	To select the protocol. The options available are ALL, TCP, UDP, ICMP, AH and ESP.
Source IP	The source IP can be a SINGLE address and a SUBNET, involving a range of IP addresses.
IP Address	To specify the source IP address.
Netmask	To specify the netmask for the source address.
Source Port	To specify the range of the source port.
Destination IP	The destination IP can be a SINGLE address or a SUBNET involving a range of IP addresses.
IP Address	To specify the destination IP address.
Netmask	To specify a netmask for the destination IP address.
Destination Port	To specify the range of the destination port.
Ingress Interface	To specify the input interface of the packet.
Egress Interface	To specify the output interface of the packet.
Enable	To enable/disable the particular packet filtering rule.

4.6.3 Parental Control

To configure Parental Control, click **Parental Control** link (**Firewall** > **Parental Control**) in the left navigation bar.

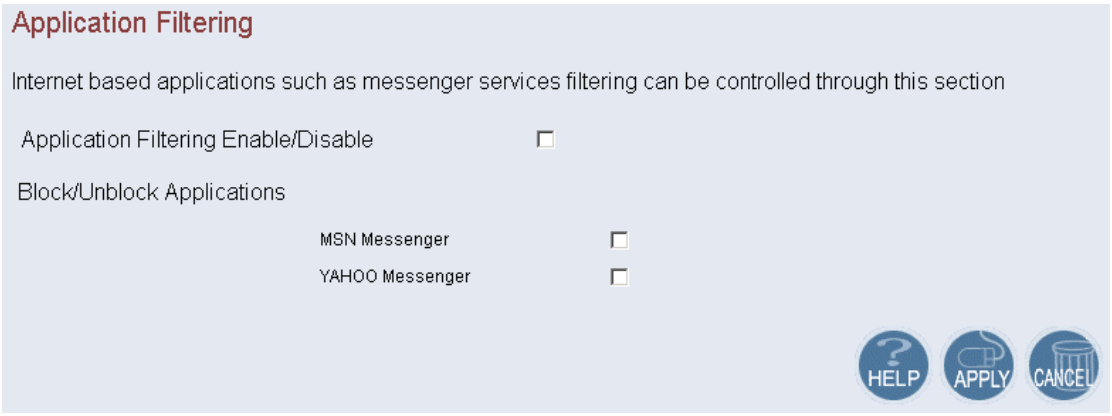


The screen contains the following details:

Field	Description
MAC Address Control	To disable, deny all or permit all the MAC address control.
MAC Address Control List	
Policy	To specify whether the particular MAC address is disabled, denied or permitted.
MAC Address	To assign the blocking MAC address for local machine.
Date/Time Select	To select the day(s) and time slot when the policy has to be applied on the MAC address provided. The **Begin** time entered should not be later than the **End** time and should be in the 24 hour format (hh:mm).
Add	Click this button to add the specified MAC address entry in the list.

4.6.4 Application Filtering

To configure application filtering, click **Application Filtering** link (**Firewall** > **Application Filtering**) in the left navigation bar.

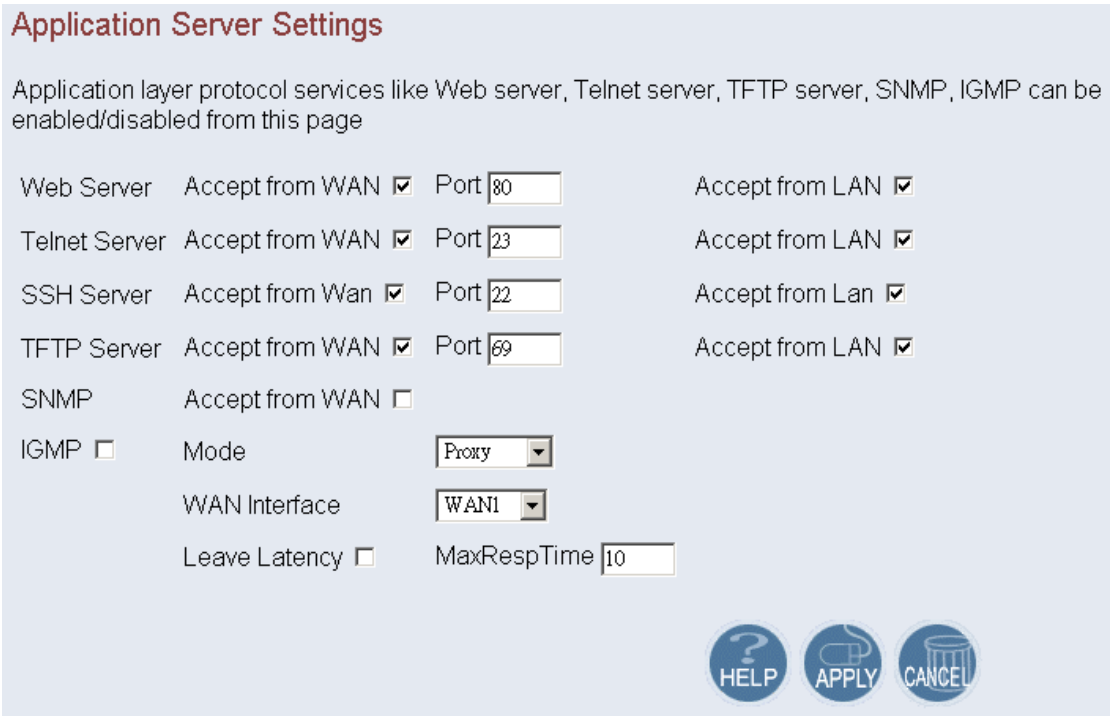


The screen contains the following details:

Field	Description
Application Filtering Enable/Disable	To enable/disable application filtering.
Block/Unblock Applications	
MSN Messenger **YAHOO Messenger**	Check the application to be blocked.

4.6.5 Application Server Settings

To configure application server settings, click **Application Server Settings** link (**Firewall > Application Server Settings**). A screen is displayed as shown below.


Application Server Settings
Application layer protocol services like Web server, Telnet server, TFTP server, SNMP, IGMP can be enabled/disabled from this page
Web Server Accept from WAN Port 80 Accept from LAN
Telnet Server Accept from WAN Port 23 Accept from LAN
SSH Server Accept from Wan Port 22 Accept from Lan
TFTP Server Accept from WAN Port 69 Accept from LAN
SNMP Accept from WAN
IGMP Mode Proxy
WAN Interface WAN1
Leave Latency MaxRespTime 10
HELP
APPLY
CANCEL

The screen contains the following details:

Field	Description
Web Server	Select the check box to enable or disable: • The acceptance from WAN • The Port number • The acceptance from LAN
Telnet Server	Select the check box to enable or disable: • The acceptance from WAN • The Port number • The acceptance from LAN
SSH Server	Select the check box to enable or disable: • The acceptance from WAN • The Port number • The acceptance from LAN
TFTP Server	Select the check box to enable or disable: • The acceptance from WAN • The Port number • The acceptance from LAN
FTP Server	Select the check box to enable or disable: • The acceptance from WAN • The Port number • The acceptance from LAN
SNMP	Select the checkbox to enable or disable: • Acceptance from WAN
IGMP	Enables/disables the IGMP Proxy function.
Mode	Select one of the modes: Proxy, Snooping.
WAN Interface	Select one of the WAN interfaces from the drop-down menu.
Leave Latency	To enable/disable leave latency.
Max Resp Time	To set the maximum response time.

4.6.6 ACL (Access Control List)

To configure the access control list, click **ACL** link (**Firewall** > **ACL**). A screen is displayed as shown below. This can be used for accessing and managing the control list for hosts, who can configure and manage the device.

The screen contains the following details:

Field	Description
ACL Settings	To enable/disable ACL function.
IP Address	Enter the LAN IP address that you want to restrict their access to the Internet. You can configure up to 16 LAN IP addresses in this list.

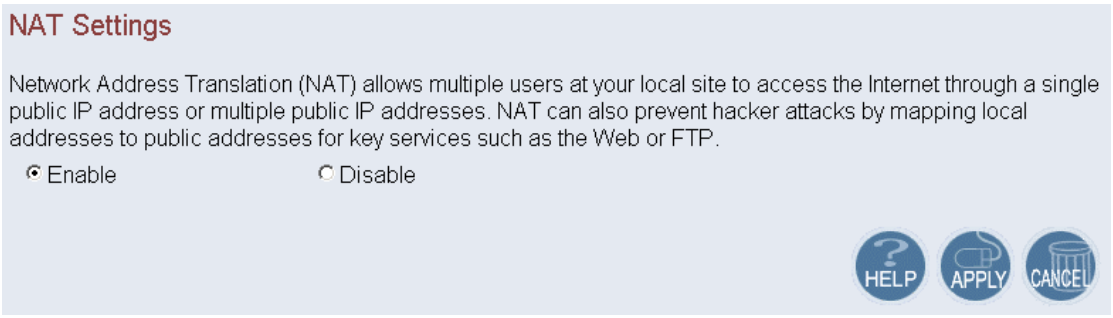
4.7 NAT

You can view **NAT Settings** from the left navigation bar. The following are the options available under NAT:

- NAT Settings
- Virtual Server
- DMZ

4.7.1 NAT (Network Address Translation) Settings

To configure NAT, click on the **NAT Settings** link (**NAT** > **NAT Settings**) in the left navigation bar. A screen is displayed as shown below:

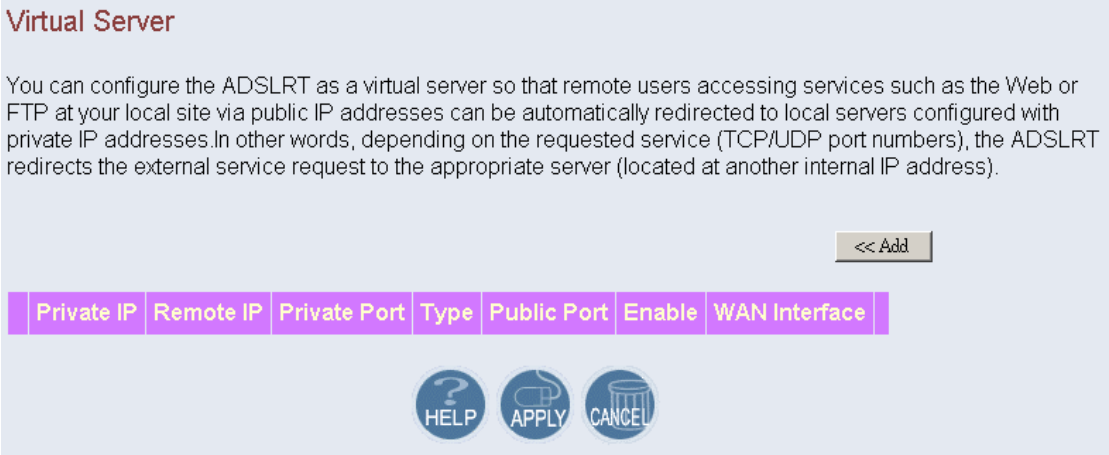

NAT Settings
Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single public IP address or multiple public IP addresses. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP.
Enable
Disable
HELP
APPLY
CANCEL

The screen contains the following details:

Field	Description
NAT Settings	To enable/disable the Network Address Translation.

4.7.2 Virtual Server

To configure virtual server, click on the **Virtual Server** link (**NAT** > (**NAT > Virtual Server**)) in the left navigation bar. A screen is displayed as shown below:


Virtual Server
You can configure the ADSLRT as a virtual server so that remote users accessing services such as the Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses.In other words, depending on the requested service (TCP/UDP port numbers), the ADSLRT redirects the external service request to the appropriate server (located at another internal IP address).
<< Add
Private IP
Remote IP
Private Port
Type
Public Port
Enable
WAN Interface
HELP
APPLY
CANCEL

The screen contains the following details:

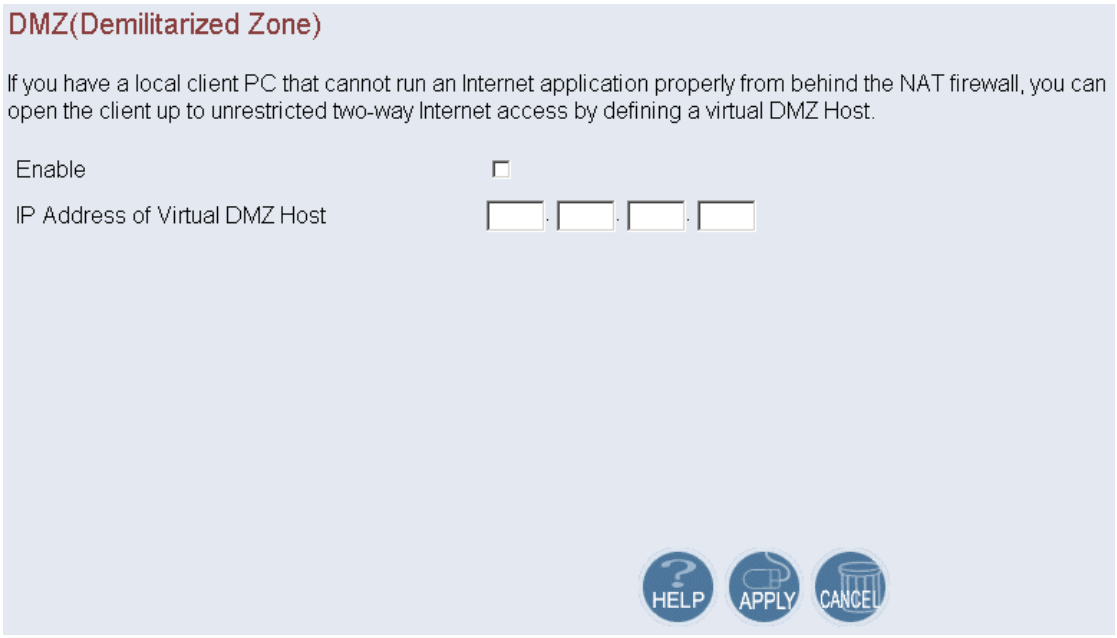
Field	Description
Private IP	To enter a private IP address of specified entry.
Remote IP	To enter a remote IP address of specified entry.
Private Port	To enter a private Port number of the specified entry.
Type	To select virtual server protocol type of the specified entry.
Public Port	To enter a public port number of the internet user to access the virtual server.
Enabled	To enable the specified entry of the virtual server.
WAN Interface	To select the WAN interface to be used for the virtual server.

- Click **Add** to add a Virtual Server entry.
- Click **DELETE** to delete a Virtual Server entry.
- Click **Modify** to modify a Virtual Server entry.

Note: FREEWAY DSL allows only configuration of maximum 5 Virtual Server entries and Add, Delete, and Modify operations are not allowed.

4.7.3 DMZ (Demilitarized Zone)

To configure the DMZ, click on the **DMZ** link (**NAT** > **DMZ**) in the left navigation bar. A screen is displayed as shown below:


DMZ(Demilitarized Zone)
If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, you can open the client up to unrestricted two-way Internet access by defining a virtual DMZ Host.
Enable
IP Address of Virtual DMZ Host
HELP
APPLY
CANCEL

The screen contains the following details:

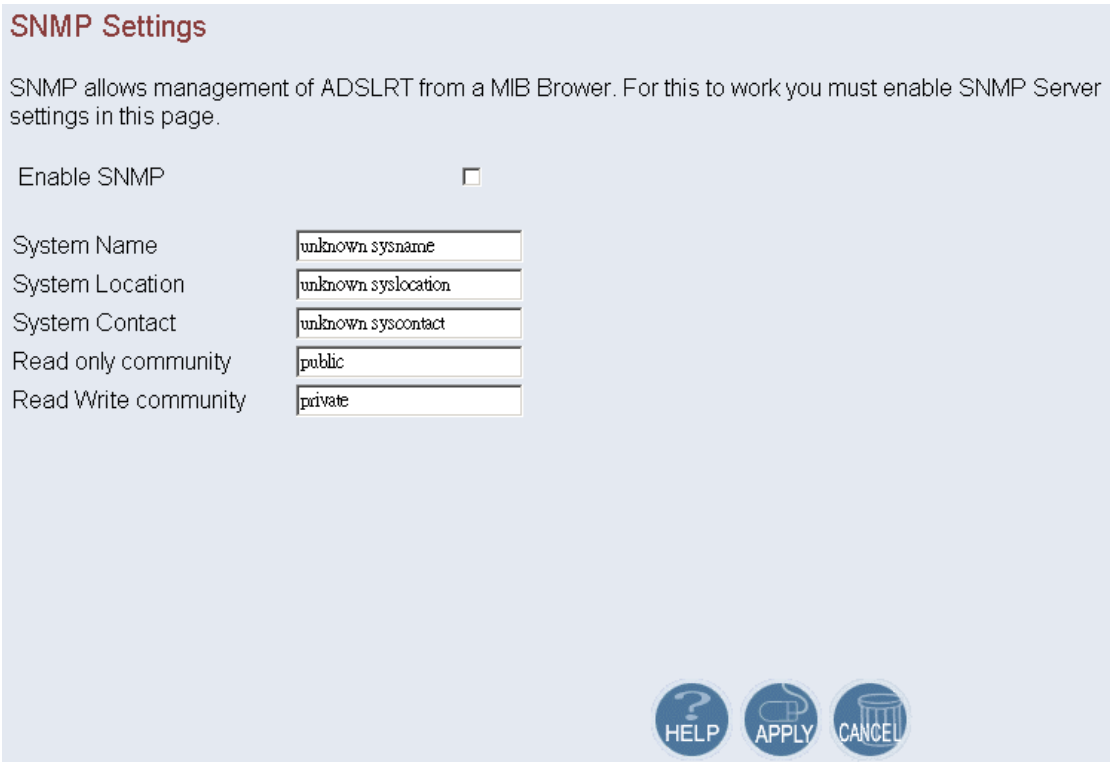
Field	Description
Enable	To enable/disable DMZ function.
IP Address of Virtual Server Host	Enter the IP Address of the DMZ host.

4.8 Device Management

Device Management allows you to enable and configure SNMP function.

4.8.1 SNMP (Simple Network Management Protocol)

To configure the SNMP settings, click on the **SNMPv2** link (**Device Management** > **SNMPv2**) in the left navigation bar. A screen is displayed as shown below.



The screen contains the following details:

Field	Description
Enable SNMP	To enable/disable SNMP.
System Name	Specifies the System name.
System Location	Specifies the System location.
System Contact	Specifies the System contact.
Read only community	Specifies the character string which contains the cleartext password to specify the read privilege between the SNMP agent and manager.
Write only community	Specifies the character string which contains the cleartext password to specify the write privilege between the SNMP agent and manager.

Appendix. Troubleshooting

Below is a list of commonly asked questions. Before calling technical support, please look through these issues to see if they help solve your problem.

The FREEWAY DSL is not functional.

1. Check to see that the POWER LED is lit and than the network cables are installed correctly. Refer to the Quick Start Guide for more details.
2. Check to see that the LAN, DSL and Internet LEDs are lit.
3. Check the settings on your PC and FREEWAY DSL. Again, refer to the Quick Start Guide for more details.
4. From your PC, can you PING the FREEWAY DSL? Assuming that the FREEWAY DSL has DHCP enabled and your PC is on the same subnet as the FREEWAY DSL, you should be able to PING the FREEWAY DSL.
5. Can you PING the Internet? Your ISP should have provided the IP address of their server. If you can ping the FREEWAY DSL and your protocols are configured correctly, you should be able to ping the ISPs network. If you cannot PING the ISP's network, make sure your using the correct protocols with the correct VPI/VCI values.

I can't connect to the FREEWAY DSL.

1. Check to see that the POWER LED is lit and that the network cables are installed correctly.
2. Make sure that the PC and FREEWAY DSL is on the same network segment. The FREEWAY DSL's default IP address is 192.168.1.1. If you are running a Windows based PC, you can open a DOS window and type IPCONFIG; make sure that the network adapter that is connected to the FREEWAY DSL is within the same subnet.
3. Also, your PC's Subnet Mask should match the FREEWAY DSL's subnet mask. The FREEWAY DSL has a default subnet mask of 255.255.255.0.
4. If this still does not work, press the Reset button. This will place the FREEWAY DSL into its factory default state. Go through the above procedures again.

The DSL LED continues to blink but does not go solid.

1. Make sure you have DSL service. You should get some kind of information from your ISP which states that DSL service is installed. You can usually tell if the service is installed by listening to the ADSL phone line; you will hear some high-pitched noise. If you do not hear high-pitched noise, contact your ISP.
2. This means that the DSL line is trying to train but for some reason it cannot establish a valid connection. The main cause of this is that you are too far away from the central office. Contact your DSL service provider for further assistance.
3. Verify that the DSL line is connected directly to the wall and to the line input on the FREEWAY DSL.

The Internet Link LED is always off.

1. Make sure you have DSL service. You should get some kind of information from your ISP which states that DSL service is installed. You can usually tell if the service is installed by listening to the phone line; you will hear some high-pitched noise. If you do not hear high-pitched noise, contact your ISP.
2. Verify that the phone line is connected directly to the wall and to the line input on the FREEWAY DSL. If the FREEWAY DSL is connected to the wall line outlet via a splitter, make sure you connect the FREEWAY DSL to the port labeled MODEM.

I cannot ping the FREEWAY DSL from the attached LAN.

1. Verify that the IP addresses are properly configured. In most cases, you enable the FREEWAY DSL's DHCP function to dynamically assign IP addresses to hosts on the attached LAN. However, if you manually configure IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the FREEWAY DSL and any attached LAN devices.
2. Make sure the device you want to ping (or from which you are pinging) has been configured for TCP/IP correctly.

I cannot connect using the web browser.

1. Be sure to have configured the FREEWAY DSL with a valid IP address, subnet mask and default gateway.
2. Check to see if you have a valid network connection to the FREEWAY DSL and the port you are using has not been disabled.
3. Check the network cabling between the attached PC and the FREEWAY DSL.

I forgot or lost the password.

1. Press the Reset button on the rear panel (holding it down for at least three seconds) to restore the factory defaults.